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14. ABSTRACT

This Addendum to the Environmental Assessment (EA) evaluates changes in project construction procedures and the addition of disposal site alternatives. The full scope of the proposed action consists of dredging and upland and ocean disposal of approximately 184,500 Cubic Yards (CY) of sediments dredged from the inboard berths of Pier 3, Naval Station, San Diego (NAVSTA). The purpose of the original dredging project was to provide a safe navigational depth for new Deep Draft Power Intensive (DDPI) ships being realigned to NAVSTA. Of the total dredged material, approximately 85,500 CY would be disposed of at the LA-5 Ocean Dredged Material Disposal Site (ODMDS). The remainder of the dredged material, approximately 99,000 CY, would be disposed upland at a permitted upland disposal site. New analyses have been performed based on the new alternatives for disposal in accordance with the National Environmental Policy Act (NEPA), supplementing the original EA. The "Affected Environment" and "Environmental Consequences" discussions are combined in the same section for each resource area in this addendum in order to provide a more concise and focused discussion within each resource area. No significant environmental impacts related to the proposed action were identified.

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DEPARTMENT OF DEFENSE
DEPARTMENT OF THE NAVY

FINDING OF NO SIGNIFICANT IMPACT FOR PROPOSED PIER 3 DREDGING AND OCEAN /UPLAND DISPOSAL, NAVAL STATION SAN DIEGO, CALIFORNIA

Pursuant to Council on Environmental Quality Regulations (40 CFR Parts 1500-1508) implementing procedural provisions of the National Environmental Policy Act, the Department of the Navy gives notice that an addendum to an Environmental Assessment (EA) has been prepared and an Environmental Impact Statement is not required for proposed Pier 3 dredging with ocean and upland disposal, Naval Station (NAVSTA) San Diego, California.

A finding of no significant impact (FONSI) was signed on July 3, 1997 for the proposed Pier 3 dredging and the project subsequently initiated. However, during upland disposal of the dredged material, munitions were discovered, resulting in the stockpiling of 105,500 CY (80,661 m3) of dredged material at NAVSTA San Diego until a disposal methodology was defined and additional funding identified to complete the project.

Approximately 72,000 CY (55,048 m3) of dredge material was delivered to the upland disposal facility prior to stockpiling. 4,500 CY (3,441 m3) of material was taken to Naval Outlying Landing Field (NOLF) Imperial Beach, California in accordance with a Regional Water Quality Control Board (RWQCB) waiver, Appendix D of the Basin Plan, which conditionally waives adoption of Waste Discharge Requirements (WDRs) for Disposal/Reuse of Dredge Spoils in Industrial or Commercial Applications.

Additional chemical analysis of the stockpiled Baypoint Formation sediment was performed and resulted in the verification that a total of 85,500 CY (65,370 m3) was suitable for ocean disposal at site LA-5. With this finding, the scope of the project was changed from the initial ocean disposal proposal of 50,000 CY (38,228 m3) to 85,500 CY (65,370 m3).

Also, to achieve project depths, a total of 184,500 CY (141,062 m3) was removed during the course of the dredging operation instead of the original estimate of 160,000 CY (122,330 m3) due to bay mud back-filling excavated areas during the dredging process.

The addendum to the 1997 EA analyzes one ocean disposal and two alternative upland locations for the disposal of the remaining 112,500 CY of stockpiled dredged material.

The proposed action is to use both ocean and upland disposal. The remaining 27,000 CY to be disposed of at an upland disposal site would be physically screened to one-inch. Approximately 20,000 CY would come from the stockpiled material and 7,000 CY would come from the NOLF Imperial Beach site. Sediments from NOLF Imperial Beach include 2,500 CY of extra soil that would be excavated in an effort to ensure that all dredged material is removed. The screening is considered adequate for proper waste classification and to address safety concerns. The remaining 85,500 CY has passed testing requirements established by the Army Corps of Engineers and the Environmental Protection Agency and will be disposed of at the LA-5 Ocean disposal site.

A modification to the existing dredging and disposal permit has been obtained from ACOE in coordination with the U.S. Environmental Protection Agency. The California Coastal Commission has concurred with the Navy's negative determination that the proposed action is "the same or similar to a past activity previously approved by the Commission." The Commission agreed that the proposed action does not raise any new issues with respect to coastal zone effects on marine resources or water quality not previously considered by the Commission.

No hazardous materials/waste management impacts will occur from dredged material disposal activities. Sediment testing indicates that the dredged material is inert. No impacts to either water resources or geology/soils resources will occur.

There will be no significant impacts to vegetation, wildlife, sensitive habitats, threatened or endangered species, or cultural resources. The U.S. Fish and Wildlife Service has concurred with the Navy's avoidance of sensitive resources at NOLF Imperial Beach. There are no documented cultural resources at the stockpile sites or the upland disposal sites.

No significant noise impacts would result from the project. Traffic studies were completed to address impacts related to the new alternatives and examined up to 250 round trips/day for upland disposal alternatives. The studies conclude that there would be no significant impacts along any of the segments due to the short duration of the project.

Air calculations determined that the annual air quality emissions during the 2-year span of this project would remain below de minimus thresholds.

Review of the potential environmental impacts of this project, combined with those associated with implementation of other proposed actions, indicated that no significant cumulative impacts would occur.

Based on information gathered during preparation of the addendum to the EA, the Department of the Navy finds that the proposed Pier 3 Dredging and Ocean/Upland disposal will not significantly impact the environment.

The addendum to the EA addressing this action may be obtained from: Commander, Southwest Division, Naval Facilities Engineering Command, 2585 Callagan Highway, Building 99, San Diego, California 92136-5198. (Attn: Grace Peñafuerte, Code 5SPR.GP, telephone (619) 556-7773.

15 Aug 00
Date

PATRICIA S. KOTZEN
Executive Director, Shore
Installation Management,
U.S. Pacific Fleet

Addendum to the Environmental Assessment for Pier 3 Dredging and Ocean/Upland Disposal

Naval Station San Diego, California

ABSTRACT

This Addendum to the Environmental Assessment (EA) evaluates changes in project construction procedures and the addition of disposal site alternatives. The full scope of the proposed action consists of dredging and upland and ocean disposal of approximately 184,500 Cubic Yards (CY) (141,062 cubic meters (m^3)) of sediments dredged from the inboard berths of Pier 3, Naval Station, San Diego (NAVSTA). The purpose of the original dredging project was to provide a safe navigational depth for new Deep Draft Power Intensive (DDPI) ships being realigned to NAVSTA. Of the total dredged material, approximately 85,500 CY (65,370 m^3) would be disposed of at the LA-5 Ocean Dredged Material Disposal Site (ODMDS). The remainder of the dredged material, approximately 99,000 CY (75,692 m^3), would be disposed upland at a permitted upland disposal site. New analyses have been performed based on the new alternatives for disposal in accordance with the National Environmental Policy Act (NEPA), supplementing the original EA. The "Affected Environment" and "Environmental Consequences" discussions are combined in the same section for each resource area in this addendum in order to provide a more concise and focused discussion within each resource area. No significant environmental impacts related to the proposed action were identified.

Lead Agency: U.S. Department of the Navy

Point of Contact:
Grace S. Peñafuerte
Southwest Division, Naval Facilities Engineering Command
2585 Callagan Highway, Building 99
San Diego, California 92136-5198
Telephone: (619) 556-7773 Fax: (619) 556-8929

July 2000

1. Introduction

This Addendum to the Environmental Assessment (EA) for Pier 3 Dredging for Ocean/Upland Disposal, Naval Station, San Diego, California (NAVSTA) evaluates changes in project construction procedures and additional disposal site alternatives. Existing information related to dredging operations and sediment quality will be incorporated by reference. New analyses have been performed based on the new alternatives for disposal in accordance with the National Environmental Policy Act (NEPA). The "Affected Environment" and "Environmental Consequences" discussions are combined in the same section for each resource area in this addendum in order to provide a more concise and focused discussion within each resource area.

1.1 Proposed Action

The full scope of the proposed action consists of upland and ocean disposal of approximately 184,500 Cubic Yards (CY) (141,062 m^3) of sediments dredged from the inboard berths of Pier 3, NAVSTA. The purpose of the original dredging project was to provide a safe navigational depth for new Deep Draft Power Intensive (DDPI) ships being relocated to NAVSTA resulting from the Defense Base Realignment and Closure Act. Of the total dredged material, approximately 85,500 CY (65,370 m^3) would be disposed of at the LA-5 Ocean Dredged Material Disposal Site (ODMDS). The remainder of the dredged material, 99,000 CY (75,692 m^3), would be disposed upland at a permitted landfill within 60 miles of NAVSTA.

1.2 Previous NEPA Documentation

Previous NEPA documentation for the Pier 3 dredging included:

- Programmatic Environmental Impact Statement (PEIS) for Dredged Material Disposal: This document programmatically analyzed dredged material disposal for a number of Navy projects including Pier 3. The PEIS examined many alternatives for dredged material disposal, including upland disposal at Miramar Landfill and Imperial Valley. The final PEIS was completed in September 1993.

- EA for Pier 3 Dredging: This EA (USDN, 1997), addressed the dredging of 160,000 CY (122,330 m^3) of which 50,000 CY (38,228 m^3) were found to be suitable for ocean disposal. The EA identified the primary upland disposal alternative as sites which meet the conditions of "An Addendum Conditionally Waiving Adoption of Waste Discharge Requirements for Disposal/Reuse of Dredge Spoils in Industrial or Commercial Applications" (Addendum 2 of California Regional Water Quality Control Board (RWQCB) Resolution 83-21 which has since been incorporated into Appendix D of the Basin Plan). The EA states that Miramar Landfill or Imperial Valley Landfill would be used for upland disposal if a reuse site is unavailable. The Finding of No Significant

Impact (FONSI) was signed on July 3, 1997. This same disposal scenario was included in the "Waste Discharge Requirements for U.S. Navy, Project P-338s, Pier 3 Dredging, San Diego County" (Order No. 97-63). These two documents are incorporated by reference.

1.3 Project Background

About 72,000 CY (55,048 m^3) of dredged material from the north side of Pier 3 were taken to Lakeside Land Company. Initially, four incidental firearm rounds were found in the dredged material disposed at Lakeside Land Company: a .50 caliber machine gun round, a 5.56mm M-16 rifle bullet, a 30.06 bullet and a 7.62 mm bullet. Lakeside Land Company asked the Navy to certify that the dredged material is free of all munitions. As operations and inspection of material continued, the count increased to a total of seven live rounds, when a second 30.06 rifle round, a second 5.56-mm round, and a 40-mm round were discovered. A Mark-25 phosphorus flare, technically considered a munitions item, was also found in the dredged sediment. This was the munitions count by the time dredging was completed and the material was stockpiled.

Dredging on the south side of Pier 3 began on February 26, 1999. This material (4,500 CY (3,441 m^3)) was taken to a "reuse site" at Naval Outlying Landing Field (NOLF) Imperial Beach, California in accordance with a RWQCB waiver, Appendix D of the Basin Plan, which conditionally waives adoption of Waste Discharge Requirements (WDRs) for Disposal/Reuse of Dredge Spoils in Industrial or Commercial Applications. Conditions for the placement of dredged material under this waiver include:

- Exclusion of hazardous waste as defined by Title 22 of the California Code of Regulations
- Exclusion of materials which exceed maximum concentration limits listed in the waiver
- Protection of the material from 100-year peak stream flows
- Covering the sediment with either constructed materials or with not less than two feet of non-contaminated clean fill
- Placing the material a minimum of 100 feet away from any surface water
- Placing the material no closer than 5 feet above groundwater
- Placing the material outside of basins designated for municipal or domestic supply

The Navy submitted a technical report to the RWQCB on February 25, 1999 demonstrating that the dredged material disposal met all the conditions of the waiver. The RWQCB concurred with the technical report on February 26, 1999. Navy notified the local community the next working day, March 1, 1999, of the its plan to dispose dredged material at NOLF Imperial Beach. The Navy began disposing dredged material at Imperial Beach and immediately capping it with about four feet of clean soil. After disposing about 4,500 CY (3,441 m^3) of dredged material at NOLF Imperial Beach, the Navy voluntarily ceased its

disposal activities due to concerns raised by officials from the City of Imperial Beach, concerning traffic and proximity to the Tijuana Estuary.

Dredging activities continued while the Navy coordinated with City officials in an effort to respond to their concerns. Dredged material was placed in the Confined Disposal Facility (CDF) until maximum capacity was reached. The Navy then began to stockpile hard Baypoint Formation material outside of the CDF in accordance with a stockpile waiver (Resolution 95-96). The volume of material placed in the CDF and stockpiles at NAVSTA San Diego totals about 105,500 CY (80,661 m^3).

The Navy finally concluded that transportation to and disposal of dredged material at NOLF Imperial Beach could be conducted in a manner that would comply with the RWQCB waiver and would otherwise avoid significant environmental impacts. However, the Navy decided to identify an alternative location out of sensitivity to public concerns.

Additional chemical analysis of the stockpiled Baypoint Formation was performed and resulted in the verification that a total of 85,500 CY (65,370 m^3) was suitable for ocean disposal (USDN 1999). With this finding, the scope of the project changed from the original proposal to dispose of 50,000 CY (38,228 m^3) at LA-5 to disposing of the 85,500 CY (65,370 m^3) at LA-5. Additionally, during the course of dredging operations, a total of 184,500 CY (141,062 m^3) was removed instead of the original estimate of 160,000 CY (122,330 m^3). During the dredging process, the bay mud back-filled the areas being excavated, which required additional removal of sediments to achieve project depths. Regulatory agencies including the Environmental Protection Agency, U.S. Army Corps of Engineers, and the California Coastal Commission have been informed regarding the change in project scope and their letters of concurrence are included in Appendix A.

2. Alternatives

This addendum analyzes the impacts of the remaining disposal actions. The current disposition of the 184,500 CY (141,062 m^3) of dredged material is defined in the table below.

Location	Bay Mud	Baypoint	Extra Soil	Total
NAVSTA San Diego	20,000 CY 15,291 m^3	85,500 CY 65,370 m^3	--	105,500 CY 80,661 m^3
Lakeside Land Co.	18,000 CY 13,762 m^3	54,000 CY 41,286 m^3	--	72,000 CY 55,048 m^3
NOLF Imperial Beach	4,500 CY 3,441 m^3	--	2,500 CY 1,911 m^3	7,000 CY 5,352 m^3
Total	42,500 CY 32,494 m^3	139,500 CY 106,656 m^3	2,500 CY 1,911 m^3	184,500 CY 141,062 m^3

Of the 72,000 CY (55,048 m^3) at Lakeside Land Company, 44,000 CY (33,641 m^3) have already been screened for munitions and deposited in the landfill. An estimated 28,000 CY (21,408 m^3) remain on site awaiting processing. Additionally, the soil volume in the table above for NOLF Imperial Beach includes up to 2,500 CY (1,911 m^3) of extra soil at the site that would be excavated in an effort to ensure that all dredged material is removed.

The following disposal locations, along with those addressed in the original EA represent a reasonable range of alternatives.

2.1 Upland Disposal Options

The decision to be made under this Addendum is the fate of the 27,000 CY (20,643 m^3) comprised of 24,500 CY (18,732 m^3) dredge sediment and 2,500 CY (1,911 m^3) of extra soil that remains stockpiled at NAVSTA and NOLF.

2.1.1 Lakeside Caster JV Reclamation Area ("Lakeside Land Company")

The Lakeside Caster JV Property is a former sand mine in the process of being filled and restored. This filling activity is under the jurisdiction of a reclamation plan approved by the County of San Diego and the RWQCB. The plan is being phased over a 12-year period, and includes removal of mining pits, sand piles, and exotic vegetation. Ultimately, existing disturbed riparian marsh and wetland adjacent to the San Diego River will be enhanced and the surrounding area revegetated. The reclamation plan allows for the disposal of dredged sediment at the lakeside property. Reclamation area operations are restricted to 80 truckloads/day between the hours of 7:00 A.M. to 6:00 P.M., Monday through Saturday.

The project would dispose up to an additional 27,000 CY (20,643 m^3) of dredged material at Lakeside. As previously stated, about 72,000 CY (55,048 m^3) of material is already placed at the site. Disposal would include physical screening through a one-inch mesh. This is considered adequate for proper waste classification and to address safety concerns.

The property has been used for upland disposal of dredged material for Pier 180 dredging at Point Loma and the Coastal Patrol Ship Pier at Naval Amphibious Base Coronado.

Reclamation activities were analyzed by the County of San Diego Board of Supervisors in an Environmental Impact Report (EIR)/Environmental Assessment (EA) for the Upper San Diego River Improvement Project Specific Plan (Brian F. Mooney Associates, 1990). The Final EIR/EA was certified on March 6, 1991 and an Addendum to the EIR/EA dated October 13, 1997 was prepared. Waste Discharge Requirements (Order 92-14) were adopted on April 6, 1990. For the most part, this addendum incorporates the environmental analysis from the EIR by reference. Findings of the EIR are briefly summarized and additional information is included where needed.

2.1.2 El Corazon Reclamation Area

El Corazon, located in Oceanside off Oceanside Boulevard, is an alternative site for disposal of the remaining 27,000 CY (20,643 m^3). This 584 acre (236 hectare (ha)) reclamation area, used for a silica sand mining until discontinued in 1991, is owned by the City of Oceanside and is operate by Moody Excavating. The site was converted to a reclamation area following publication of a Negative Declaration in September 1992 (SMGB 1992). The reclamation area accepts concrete, rock, clean fill dirt, and other material approved by the City. Disposal of asphalt is not permitted unless specifically authorized by City, and no hazardous materials are accepted. Site has the capacity of over 1,000,000 CY (76,456 m^3). The reclamation area is open from 7:00 A.M. to 5:00 P.M., Monday through Saturday, and is closed on legal holidays and Sundays. The reclamation area is located in Oceanside east of Interstate 5 and north of State Highway 78. Access is provided from Oceanside Boulevard, and the distance from NAVSTA to the site is approximately 38 miles (61.2 kilometers (km)).

Reclamation activities were evaluated in a Negative Declaration developed by the Department of Conservation, State Mining and Geology Board. Conclusions of the Negative Declaration were that the reclamation plan would not have significant adverse effects on geology, water quality, air quality, soils, vegetation or hydrology and would have a de minimis effect on wildlife. The U.S. Fish and Wildlife Service was consulted and concurred that the avoidance of disturbance to the federally threatened California gnatcatcher would be assured by the staking and fencing of the existing coastal sage scrub (CSS) habitat, on-site biological monitoring and the limitation of reclamation area construction activities to the non-breeding season between August 30 and February 15.

The City of Oceanside is the lead agency with reclamation oversight and there are no existing WDR established for the site. In order to receive dredge sediments, a RWQCB review of compliance with Appendix D of the Basin Plan would be required. Site managers place the burden of analysis on those bringing material to the site. Only inert material is accepted. According to the City of Oceanside Planning Department, the City of Oceanside would require the Navy to screen the sediments for munitions prior to transporting material for disposal at El Corazon. Screening operations similar to those described above for Lakeside would be performed at Naval Station.

2.2 Ocean Disposal

The original EA thoroughly addresses impacts of disposal of 50,000 CY (38,228 m^3) at LA-5; therefore the scope of this Addendum is to address the additional 35,500 CY (27,142 m^3) that tested suitable for ocean disposal. The Army Corps of Engineers has issued a permit modification, dated March 3, 2000, for LA-5 disposal of the 85,500 CY (65,370 m^3).

The stockpiled material was dredged from the south side of Pier 3 and stockpiled in March/April 1999 under Department of the Army permit number 97-20146-DZ. The Baypoint Formation was deposited over 8,000 years ago; therefore, the material was removed from pollution sources at the time of original deposition. The Baypoint Formation material is relatively dense with very low water content. The stockpiles are contained by low berms of clean material. In addition, they are underlain and overlain with 10-mil thick impervious sheeting.

Under the original permit, Baypoint Formation material was determined to be suitable for ocean disposal. However, the permit required that Pier 3 dredging include a minimum 0.5 foot (0.15 m) overdredge (buffer zone) beyond the unconsolidated sediment (planned for upland disposal) into the clean Baypoint Formation material (planned for disposal at LA-5). The Pier 3 project dredged the upper unconsolidated bay mud using the environmental cable arm bucket dredge and placed it in the upland CDF and at NOLF Imperial Beach in accordance with Appendix D of the San Diego Regional Water Quality Control Board Basin Plan. The Baypoint Formation including most of the buffer zone material was dredged using a heavy clamshell dredge and placed in three temporary stockpiles at Naval Station San Diego. It is likely that very small amounts of unconsolidated bay mud were left behind.

Each of the three stockpiles were sampled as individual sites. Appendix B provides the Sampling and Analysis Plan, which was submitted to the Army Corps of Engineers and Environmental Protection Agency (EPA). The evaluation included physical characterization and sediment chemistry testing outlined in EPA Region IX recommendations. Physical and chemical analyses of sediment were performed in accordance with "Green Book" guidance.

Based upon the upland disposal options and the increased ocean disposal volumes, the following alternatives are addressed:

Ocean disposal with upland disposal at Lakeside Land Company - an additional 35,500 CY (27,142 m^3) would be disposed of at LA-5 and the remaining 27,000 CY (20,643 m^3) stockpiled at NAVSTA and NOLF would be disposed of at Lakeside.

Ocean disposal with upland disposal at El Corazon Reclamation Area -- an additional 35,500 CY (27,142 m^3) would be disposed of at LA-5 and the remaining 27,000 CY (20,643 m^3) stockpiled at NAVSTA and NOLF would be disposed of at El Corazon.

2.3 Disposal Alternatives Considered but Rejected from Further Consideration

The following alternatives were considered for upland disposal of Pier 3 dredged material but rejected for economic and environmental reasons. Some of these alternatives may become more feasible for future projects as conditions change.

2.3.1 Marine Corps Base Camp Pendleton.

This site is a sanitary solid waste landfill about 60 miles (97 km) away from NAVSTA San Diego. The site can accept only 400 CY (306 m) of waste per day. Additional waste analysis would be required.

The Camp Pendleton Landfill is rejected from further consideration due to the long distance away from NAVSTA San Diego, daily volume limitations, and the additional waste analysis requirement. Most importantly, this alternative would take up valuable sanitary landfill space.

2.3.2 Candelaria Environmental Company at Cahuilla Indian Reservation.

The Candelaria Environmental Company owns and operates a commercial soil treatment and recycling facility designed exclusively for the biotreatment of non-hazardous hydrocarbon contaminated soils, as defined by the Resource Conservation and Recovery Act (RCRA) and the California Code of Regulations (CCR) Title 22. The facility is located about 95 miles from NAVSTA San Diego, at the Cahuilla Indian Reservation, just outside of Anza, Riverside County, California.

The Candelaria site is rejected from further consideration due to additional tipping cost in excess of $6.9 million (hauling cost not included), the extreme distance away from NAVSTA San Diego (~95 miles/ 153 km) and additional waste analysis that would be required. In addition, Candelaria requested absolute assurance that the material is free of munitions.

2.3.3 San Diego Landfill Systems/Allied Waste Company Landfills.

All three landfills listed below are rejected from further consideration due to additional tipping cost in excess of $6.9 million (hauling cost not included) and because disposal at these locations would take up valuable sanitary landfill space (personal communication, Julie Juntunen, Compliance Specialist, for San Diego Landfill Systems, June 24, 1999). Below are additional site details and reasons to reject from further consideration.

Otay Landfill - Otay is a Class III landfill that accepts residential, commercial, and non-hazardous industrial waste. It is located in Chula Vista, east of I-805. Access is provided from Maxwell Drive via Otay Valley Road. The distance from NAVSTA to this site is approximately 10 miles (16 km). The 464-acre facility is owned by Allied Waste Industries and open from 7:00 a.m. to 4:30 p.m., seven days a week. The landfill has a current permitted life capacity of 10 to 12 years, based on permitted disposal of up to 3,500 tons of solid waste per day. A proposal to develop additional landfill airspace would extend the life of the landfill

though the year 2024 and increase the average disposal capacity to 5,000 tons per day. This alternative is rejected from further consideration because it is not permitted to accept soils containing PAHs.

Ramona Landfill - The Ramona Landfill is a Class III landfill that accepts residential, commercial, and non-hazardous industrial waste and primarily services the City of Ramona, several miles away. The landfill is north of the I-78 freeway and the City of Ramona. Access is provided from Pamo Road, and there is no rail access available. The distance from NAVSTA to this site is approximately 50 miles (80 km). The landfill is owned by Allied Waste Industries. Approximately 40 acres (16 ha) of the 80-acre (32-ha) site are used for waste disposal, and the facility is permitted to accept up to 295 tons of waste per day. Hours of operation are Monday through Friday, 7:30 a.m. to 4:00 p.m.; the facility is closed on Saturdays and Sundays.

In addition to economic reasons and reduction of sanitary landfill space, this landfill is rejected from further consideration because it is restricted in its ability to meet the needs of sediment disposal from the proposed action. The restrictive maximum tonnage that the landfill accepts (295 tons per day) would limit the extent to which this landfill could be used. Hours of operation would also limit the number of trucks that could access the site daily. Pamo Road is a narrow and winding road that constrains access to the landfill (personal communication, Julie Juntunen 1999).

Sycamore Landfill - The Sycamore Landfill is a Class III landfill that accepts some types of contaminated waste, although it is not permitted to accept soils containing non-hazardous concentrations of PAHs. The landfill, owned by Allied Waste Industries, is planning improvements that would allow disposal of waste with PAHs sometime within the next year. The landfill is located near the City of Santee in San Diego County, north of State Route 52. Access is provided from Mast Boulevard, and the distance from NAVSTA to this site is approximately 20 miles (32 km). Approximately 340 acres (138 ha) of the 519-acre (210-ha) site are used for waste disposal, and the facility is permitted to accept up to 3,300 tons of waste per day. The landfill is open Monday through Friday, 7:00 a.m. to 4:30 p.m., Saturdays 7:30 a.m. to 4:00 p.m., closed on Sundays. The remaining capacity of the landfill is expected to last until 2015, assuming no further expansion.

In addition to economic reasons and reduction of sanitary landfill space, this landfill is not feasible because it is not permitted to accept soils containing PAHs. The dredged material contains relatively low concentrations of PAHs compared to the respective thresholds and indicates only minor potential for toxicological effects. However, this material could not be accepted at the Sycamore landfill in the absence of new permits allowing disposal of soils containing nonhazardous concentrations of PAHs (personal communication, Julie Juntunen 1999).

2.3.4 Kettleman Hills Landfill.
Kettleman Hills is the closest existing Class I landfill, and is located in Kings County, northeast of Paso Robles. The distance from NAVSTA to this site is approximately 300 miles (483 km). This site is rejected from further consideration due to the excessive additional tipping cost of $13.8 million (does not include haul cost), and the extreme distance away from NAVSTA San Diego. In addition the site is not permitted to accept waste that may contain munitions; therefore screening would be required.

2.3.5 Hanson Aggregates Pit (Parcel B), Marine Corps Air Station Miramar
The site is part of a 57-acre (23.1 ha) area, which was leased to Hanson Aggregates by the Department of the Navy for aggregate extraction. Hanson Aggregates is in the process of fulfilling its reclamation plan under the lease, which requires that the site be reclaimed (filled) back to its original elevation.

The additional upland disposal alternative at the Hanson Aggregates pit should not be confused with the Miramar Class III Landfill alternative, discussed in the original EA. The Hanson pit is a separate site, which has its own Waste Discharge Requirements and is not managed as a Class III Landfill.

Reclamation at the Hanson Aggregates Plant is authorized by the RWQCB under the "Waste Discharge Requirements for Sim J. Harris Company, Miramar Plant, San Diego County" (Order No. 94-63). The WDRs were adopted on October 13, 1994 at the Regional Water Quality Control Board meeting.

Due to on-going review of the site operator's environmental compliance history, this site has been rejected.

3. Affected Environment and Environmental Consequences

In order to simplify the presentation of the analysis of the proposed changes associated with this Addendum and to avoid redundant discussions, this Chapter breaks down upland disposal, stockpile sites, and ocean disposal components except when additive or compound impacts require attention under air quality and traffic.

3.1 Geological Resources

3.1.1 Upland Disposal Sites
Lakeside Land Company
The site is located in a wide flat alluvial valley along the San Diego River. The site was used for sand mining. As stated in the EIR/EA, extensive compaction of the fill soil (including dredged material) is required to ensure adequate foundation support of proposed development in the area to ensure no significant impacts. Furthermore, the Reclamation Plan (RP-97-001) includes erosion control

measures such as compaction, hydroseeding, sand bag silt basins near storm outlets and erosion control fences. Placement of an additional 27,000 CY (20,643 m^3) of dredge material in a manner consistent with the existing reclamation plan would not significantly impact geologic resources.

El Corazon Reclamation Area

The site is located in the terraces and rolling hills of the inland portion of the Pacific coastal plain. As stated in the Negative Declaration, changes to the slope, topography, and soil depth in the project area have previously resulted in unstable earth conditions. The Reclamation Plan calls for the fill and grading of the site to allow for a 2:1 (horizontal : vertical) slope to stabilize the site. Placement of an additional 27,000 CY (20,643 m^3) of dredge material in a manner consistent with the existing reclamation plan would not significantly impact geologic resources.

NOLF and NAVSTA Stockpile Areas

The NOLF site which was used as a reuse site meeting all of the WDRs for disposal/reuse of dredge spoils in industrial or commercial applications is located in a flat, annual grassland area that will be restored to previous conditions. Once excavation is completed to remove the 4,500 CY (3,441 m^3) of dredge spoils plus an additional 2,500 CY (1,911 m^3) to ensure all dredge material is removed, the area would be recontoured and revegetated; therefore, since the site would be restored, no significant impacts would result to geological resources.

Of the three NAVSTA stockpile sites, the Boat Yard and the Recycle Yard would be restored to their previous conditions allowing boat storage and recycling activities to continue. The CDF at the former ballfield site would remain a CDF in anticipation of receiving additional dredge material for drying. Future dredging projects may also require the use of the boat yard and recycle yard locations, but no decisions have been made at this point in time. Erosion control measures would be implemented during the transportation of the materials from the site. Therefore, the proposed removal of stockpiled dredge material and restoration of the stockpile sites would result in no significant impacts to geological resources.

3.1.2 LA-5 Disposal Site

No impacts on geological resources in addition to those discussed in the original EA would occur at this disposal site.

3.2 Water Resources

This section was not previously included in the EA, because general discussions of water quality impacts were distributed throughout other sections of the original EA. However, it is added here to address site-specific hydrology and water quality concerns related to groundwater and surface water.

Pier 3 Sediment Quality and Leachability

Sediment quality data indicates that the dredged material is suitable for upland disposal. This data was provided in the original EA (USDN, 1997). A discussion of leachability related to munitions is provided in the "Safety and Environmental Health" section of this document.

Total Threshold Limit Concentration (TTLC) analysis (volatile organics, semi-volatile organics, PCBs, pesticides, BTXE, dioxins, TPH and Title 22 metals) was run on 40 samples. Some sample results had concentrations of metals and PCBs that were just barely detected by the instruments (in other words, very low levels), but no hazardous waste levels were exceeded for any constituent.

As of January 1, 1999, the California Health and Safety Code has been amended to lower the regulatory threshold (TTLC level) for lead from 1000 mg/kg to 350 mg/kg. The lead results were reevaluated and found to have five sample results above the 350 mg/kg. The regulations pertaining to the management of hazardous waste require that representative samples of waste be collected and define representative samples as exhibiting average properties of the whole waste. EPA's SW-846, Test Methods for Evaluating Solid Waste, an approach approved by the State of California for identification of hazardous wastes (CCR 66261.126, Appendix I) was utilized and the lead concentration was found to be below the regulatory threshold.

Additional analysis (Soluble Threshold Limit Concentration or STLC) was run to determine if the low levels of metals or PCBs would leach from the material into groundwater. No PCBs were shown to leach from the material. Copper was the only metal detected by the instruments at 26 µg/L, but the copper levels were below the STLC criteria (25,000 µg/L) and California Drinking Water Standards, secondary maximum contaminant levels (1,000 µg/L). These results demonstrate that metals do not leach from the sediment at concentrations near any level of regulatory concern. In adopting WDRs for Pier 3 Dredging, the RWQCB classified the dredged material as "inert" and in compliance with concentration limits established in Appendix D of the Basin Plan.

California Code of Regulations, Title 27, section 20230 states that "inert waste" does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives, and does not contain significant quantities of decomposable waste. "Inert Waste" does not need to be placed at waste management units. Regional boards may prescribe individual or general waste discharge requirements for discharges of inert material.

The unconsolidated material has been dewatered at the CDF at NAVSTA San Diego. The Baypoint Formation material, which is currently stockpiled, is dredged up in very dense clumps, which are essentially dewatered. Therefore, it

is expected that there would be no effluent discharged from the dredged material once it is taken to the final disposal site.

An assessment of salinity of dredged material was conducted for Chollas Creek maintenance dredging at Naval Station San Diego in 1997 by analyzing Total Dissolved Solids (TDS). The material from Chollas Creek is similar in location and characteristics to the Pier 3 unconsolidated material. TDS ranged from 678 to 738 milligrams/liter (mg/L). Chloride is one of the dissolved solids that make up TDS. It is expected that the majority of the material, which is dense Baypoint Formation material, will have even lower level of salinity.

For a discussion of the potential effects of munitions on water quality please see Section 3.9.

3.2.1 Upland Disposal Sites

Lakeside Land Company

The Lakeside site is located within the Santee Hydrologic Subarea (7.12) of the lower San Diego hydrologic area of the San Diego Hydrologic Unit. Reclamation activities are conducted in accordance with site specific WDRs (Order No. 92-14). CRWQCB provided approval and concurrence of upland disposal at the Lakeside Land Company (Appendix A). All Pier 3 dredged material taken to the Lakeside site would be placed above the groundwater table. Beneficial uses of groundwater at the site include municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply (RWQCB, 1994).

Leachable contaminants within the sediment do not exceed the water quality objectives established for the site. Any surface runoff from the material as it is being placed in the pit would terminate at the bottom of the pit. The dredged material would eventually be covered by more inert material as outlined in the reclamation plan. The Reclamation Plan (RP-97-001) includes erosion control measures such as compaction, hydroseeding, sand bag silt basins near storm outlets and erosion control fences.

Increase in the salinity of the soil is a concern in disposing dredged material at an upland location. The majority of the material is dense, Baypoint Formation material, which contains very little porewater, hence very little salt. The remainder of the material is unconsolidated sediment.

Based upon the protective provisions in the Reclamation Plan, use of the Lakeside site would not result in significant impacts to hydrology or water quality.

El Corazon Reclamation Area

As with Lakeside, the Reclamation Plan incorporates grading and drainage considerations and incorporates protection of established drainage corridors

(Garrison Creek and Loma Alta Creek). Groundwater levels are 200 feet below surface grade. With the implementation of the standard erosion control measure and 100-foot buffer distance to the creeks, impacts to hydrology and water quality would not be significant.

NOLF and NAVSTA Stockpile Areas

All sites were identified with the WDR restrictions used as guiding principles. All sites are more than 5 feet above ground water and would not be influenced by a 100-year flood. Restoration of sites will be performed in a manner to limit erosion of base materials once stockpiles are removed. No significant impacts would result.

3.2.2 LA-5 Disposal Site

Baseline environmental conditions at LA-5 remain unchanged from those described in the 1997 EA. All sediments proposed for disposal at LA-5 have passed physical and chemical testing criteria established in the "Green Book"; therefore, impacts to marine biota would not be significant and are consistent with the impacts analyzed during the establishment of the LA-5 disposal site. The addition of 35,500 CY (27,142 m^3) of ocean suitable sediments would not result in significant impacts to water quality based upon the premise that the physical and chemical screening that is necessary to receive authorization to use the ocean disposal site was designed specifically for the purpose of avoiding harmful toxicological conditions in the marine environment.

The Army Corps of Engineers has issued a permit modification, dated March 3, 2000, for LA-5 disposal of the 85,500 CY (65,370 m^3) after reviewing the final sediment evaluation report (USDN 1999).

3.3 Biological Resources

3.3.1 Upland Disposal Sites

Lakeside Land Company

The site is located on undeveloped land which has been severely disturbed due to materials extraction. The Upper San Diego River Improvement Project (USDRIP) Specific Plan EIR/EA discusses sensitive habitat areas (primarily wetlands) in the vicinity. Operations at Lakeside would not directly impact sensitive habitat areas. The USDRIP EIR/EA concludes that the specific plan would have no significant impacts and includes mitigating measures such as preservation of existing wetlands, implementing the USDRIP revegetation plan, and avoidance of construction adjacent to least Bell's vireo habitat during the breeding season (September 1 to February 1).

El Corazon Reclamation Area

The site is located on undeveloped land which has been severely disturbed due to materials extraction. The Negative Declaration discusses sensitive habitat areas including the location of CSS that is to be fenced and avoided during California gnatcatcher breeding season (15 February – 30 August) and the riparian area known as Garrison Creek which is protected by the designation of a 100 foot buffer area. Operations at El Corazon would not directly impact sensitive habitat areas. The Negative Declaration specifies that the development of the reclamation area would have no significant impacts, and includes mitigating measures such as preservation of existing riparian areas, implementing a revegetation plan with annual grassland species and CSS species, and avoidance of construction adjacent to existing CSS except during the non-breeding season defined as August 30-February 15.

The proximity between the CSS and the active fill area on the North Site is approximately 200 feet (61 m) on an outside slope. Based upon the topography of the area with an associated lack of line of site and natural noise barrier between the fill area and the CSS, no impacts to CSS or gnatcatchers would occur. Due to the configuration of the site and intent to avoid operations in sensitive resource areas, use of the El Corazon site would not significantly impact biological resources.

NOLF and NAVSTA Stockpile Areas

The stockpiles of sediments at NAVSTA and NOLF would serve some limited yet nominal use as habitat for species that utilize disturbed areas. The NAVSTA sites (boat yard, recycle yard and ballfields) did not support substantial flora or fauna prior to the use as a temporary stockpile site, and the NOLF site, although less disturbed than the NAVSTA sites, was predominately a non-native grassland area. Nearby vernal pools were avoided with the original deposition of the 4,500 CY (3,441 m^3) of material. The NOLF site would be enhanced with restoration efforts to permanently stabilize the area after the dredge material is removed. Since there would be no substantial change in availability of the site to biological resources, no significant impacts would result; however, U.S. Fish and Wildlife Service raised concerns over biological resources (see further discussion below and in Appendix A).

U.S. Fish and Wildlife Service (USFWS) expressed concern in a letter dated April 12, 1999 over potential impacts to a vernal pool from the excavation and relocation of dredged material from NOLF Imperial Beach. These concerns have been discussed and USFWS concurrence on the proposed action has been received (Appendix A). Excavation operations would relocate dredged materials from NOLF disposal sites B-1 and B-2 to an upland disposal site.

Approximately 7,000 CY (5,352 m^3) of sediments, comprised of 4,500 CY (3,441 m^3) of dredged materials and 2,500 CY (1,911 m^3) of extra soil (cover), would be relocated. Excavation and relocation plans have been coordinated with Edie Jacobsen, Southwest Division Soil Conservationist. Several measures would be implemented to prevent adverse effects on the vernal pool located in disposal site B-2 and to restore the excavation site. A biological monitor familiar with vernal pools would be on-site during the excavation and removal of dredged material from NOLF Imperial Beach to mark vehicle and construction equipment access, routes, and staging areas and to delineate areas of sensitive habitat for federally listed species. The equipment proposed would not be operated on the roads or pathways immediately surrounding the vernal pool site. All construction equipment and vehicles would be confined to the truck route and staging area, shown in Figure 1. In addition, a silt curtain would be placed around the perimeter of the vernal pool and across a drainage swale to the northwest of the vernal pool, as an added safeguard. Furthermore, a survey for the presence or absence of the western burrowing owl (*Speotyto cunicularia hypugaea*), a Federal Species of Concern, would be conducted prior to initiation of excavation activities. If burrowing owls are found in the area to be disturbed by excavation operations, excavation and relocation would not commence during the owl's nesting season, March through August.

Incoming trucks would travel westward along Boundary Road on the southern perimeter of the disposal sites. Physical markers would be placed on Boundary Road to the east and west of the vernal pool to prevent truck access near the pool. The trucks would turn off Boundary Road and enter the excavation area into Site B-2, over 400 feet (122 m) east of the vernal pool. Incoming vehicles would be empty and the vehicles covered with a canvas tarp or other suitable alternative covering to prevent any leakage after being loaded.

Loading would occur over 400 feet (122 m) to the north of the vernal pool. Excavation operations would be limited to the previous disposal area and an area approximately 75 feet (23 m) south of the disposal area. This southern boundary would be staked to limit disturbance near the vernal pool. Loaded trucks would exit the excavation area, by returning to Boundary Road southward, approximately 300 feet (91.4 m) west of the vernal pool. All truck routes to and from the excavation site to Boundary Road would be staked to define the truck route and limit truck traffic in the disposal area. Departing trucks would then proceed westward along Boundary Road and leave the base.

The staging area for the contractor's equipment would be located near the entrance to the excavation area, approximately 300 feet (91.4 m) east of the vernal pool. After each truck deposits its load at Lakeside, a washdown would be required adjacent to the fill area.

USFWS requested that the area disturbed during disposal operations be restored with Coastal Sage Scrub habitat. Unfortunately, restoring the site with

this type of habitat would be inconsistent with air operations occurring at the site. Currently, annual grass dominates the site, which is regularly mowed in efforts to reduce foreign object debris (FOD) hazards to aircraft. The excavation site and all areas disturbed by truck traffic would be revegetated with Zorro annual fescue (*Vulpia myuros*), a low maintenance variety of grass, essentially restoring the site to its previous condition. Planting would begin between October and January. The finish grading would be contoured to minimize the runoff of sediments that could result from local storm events.

Based on the proposed plan for excavation, disposal, and revegetation, impacts to the biological resources at the disposal site would not be significant.

3.3.2 LA-5 Disposal Site.

No impacts on biological resources in addition to those discussed in the original EA would occur at this disposal site. Disposal of an additional 35,500 CY (27,142 m^3) of sediment at LA-5 would result in a temporary increase in water column turbidity as sediment settles to the sea floor which then returns to background conditions. No significant impacts to biological resources are anticipated due to the sediment composition and the previously analyzed use of LA-5 when the disposal site was first designated.

3.4 Cultural Resources

3.4.1 Upland Disposal Sites

Lakeside Land Company

Per the USDRIP EIR/EA, there are no known cultural resources within the project area. The project area is highly disturbed and the likelihood of discovering unknown sites is low. No significant impacts to cultural resources would occur.

El Corazon Reclamation Area

As stated in the Initial Study, no cultural resources were identified in the reclamation area during a records search of the South Coast Information Center database, although 20 prehistoric or historic sites were identified within a one-mile radius. Since the mining activities resulted in extensive disturbance to the area, it is unlikely that filling activities would result in alteration or destruction of any archaeological sites. No significant impacts to cultural resources would result from filling activities.

NOLF and NAVSTA Stockpile Areas

No known prehistoric or historic resources are located at the NAVSTA sites or the NOLF site (Chambers Consultants and Planners 1982, KEA 1996). Removal of the stockpiled sediments would not result in significant impacts to cultural resources since no known resources occur in the previously disturbed areas.

3.4.2 LA-5 Disposal Site

No impacts on cultural resources in addition to those discussed in the original EA would occur at this disposal site.

3.5 Air Quality

Approach to Air Quality Analysis

The air quality analysis presented in this section addresses the potential local and regional effects from the dredging and sediment material transfer that can be expected as a result of the project. This section analyzes air quality impacts from the entire project, not just upland disposal. Since this Addendum addresses changes to the original proposed action analyzed in the 1997 EA, the air quality section is arranged to address emissions for actions that have been completed and for future actions that would be implemented upon the completion of this Addendum and associated Findings.

Information on project emission sources was obtained from recent documents. These documents include the *Compilation of Emission Factors* (AP-42) (US EPA, 1985), *Development of Facilities to Support Deep Draft Power-Intensive (DDPI) Ships, Naval Station San Diego* (USDN, 1998), *Draft Environmental Impact Statement for Dredged Material Disposal* (USDN, 1995), and *Final Environmental Assessment for Pier 3 Dredging Ocean and Upland Disposal* (USDN, 1997). The discussion in this addendum updates potential air quality impacts from the action and reflects recent knowledge of the project as refined since *the Final Environmental Assessment for Pier 3 Dredging Ocean and Upland Disposal* (USDN, 1997). Emissions produced during the dredging and disposal activities are short term and temporary in nature. They consist of dust (suspended particulates), equipment exhaust and vehicle exhaust.

Vehicular emissions are based on estimates of the daily vehicle miles traveled (VMT). The increase in regional VMT applies to all trucks transporting dredged material from the proposed project site. Emissions associated with the trucks VMT were calculated using BURDEN7F, which provides emission factors in tons/mile, using representative average vehicular speeds and ambient conditions specific to San Diego.

The San Diego Air Basin (SDAB) is classified under federal regulations as a "serious" non-attainment area for ozone and a maintenance area for carbon monoxide. Under state regulations, SDAB is classified as non-attainment for both ozone and PM_{10}. Attainment/nonattainment refer to achievement or non-achievement of ambient air quality standards. These federal and state standards are set by regulation at levels designed to protect human health and public welfare with a reasonable margin of safety. As such, they provide the best

means of assessing significance of emissions with regard to the human environment pursuant to NEPA. Where human receptors in the surrounding community are not likely to be exposed to levels of criteria pollutants that exceed ambient air quality standards, or that violate any applicable standard for toxic pollutants, the effect is not deemed significant.

The General Conformity Rule (40 CFR Parts 51 and 93) is a requirement of the federal Clean Air Act rather than NEPA. It requires any federal agency responsible for an action to determine if its action conforms with guidelines and regulations of the pertinent State Implementation Plan (SIP). Conformity means conformity to the SIPs plan for attainment and/or maintenance of federal ambient air quality standards. The conformity rule sets *de minimis* levels for criteria pollutants and precursors. Where an area is in attainment for a criteria pollutant, or where the pollutant or its precursor is below the *de minimis* threshold, the conformity rule requires nothing further. However if projected emissions were to exceed the *de minimis* levels associated with non-attainment pollutants, a written conformity determination demonstrating conformity of the proposed project would be required. Emissions considered under the conformity rule are mobile source emissions and other emissions that are not subject to new source review or otherwise exempt. The *de minimis level* associated with the non-attainment pollutants for the SDAB are set out below. These same numbers constitute the major stationary source thresholds, as identified in the SDCAPCD new source review regulations. Stationary sources with emissions above these levels are subject to more stringent analysis and control under air regulations. The following table shows evaluation criteria and estimated annual emissions from the proposed action. Year 1 captures all emissions associated with completed actions including dredging, delivery of the 72,000 CY (55,048 m^3) of material to Lakeside and placement of 110,000 CY (84,102 m^3) at NAVSTA and NOLF. Year 2 values address emissions of disposing of 85,500 CY (65,370 m^3) at LA-5 and the transportation of the 27,000 CY (20,643 m^3) including 2,500 CY (1,911 m^3) extra soil from NOLF to either El Corazon or Lakeside disposal sites.

Pollutant	Evaluation Criteria (Tons/Year)	Year 1 Emissions tons	Year 2 Emissions (El Corazon) tons	Year 2 Emissions (Lakeside) tons
Carbon monoxide (CO)	100	18.1	4.9	4.0
Sulfur oxides (SO_x)	100	4.4	1.2	1.2
Reactive Organic Gases[1] (ROG)	50	3.3	1.2	1.0
Nitrogen oxides (NO_x)[1]	50	44.2	11.8	10.6
Suspended particulates (PM_{10})[2]	100	5.2	2.7	2.5

[1] ROG and NO_x are analyzed as precursors for ozone.

[2] EPA has promulgated a standard for $PM_{2.5}$. However the new standard has been successfully challenged in a recent judicial proceeding. Moreover, no implementing rules or attainment designations were yet in place. Under the circumstances, the Navy believes that it is appropriate to continue to track impacts of fine particle pollution using the current standards based on PM_{10}.

Given that both the federal and state regulatory systems affecting both stationary and mobile sources treat the evaluation criteria as thresholds of concern for purposes of air quality regulation, this document uses them as preliminary or screening thresholds for assessing potential significance pursuant to NEPA. Pollutant levels below these thresholds do not pose significant concerns, because they are not likely to expose human receptors in the surrounding community to pollutant levels in excess of ambient air quality standards. Pollutant levels above the threshold would require a harder look at consequences. This could range from simply taking a closer, to a more precise look at the pollutant emitting activities, to performing extensive air dispersion modeling and health risk assessment procedures, depending on circumstances. If the harder look at consequences predicted that an ambient air quality standard would be exceeded, then further mitigation measures would also be considered in an effort to avoid significant impacts.

Air Quality Impacts

The starting point for the air impacts analysis was generation of emissions estimates for projected activities. These air emissions could result from fugitive dust generated by stockpiling and disposal activities, and from tailpipe emissions caused by heavy-duty equipment and vehicles. Activities associated with dredging and disposal of dredged materials will produce air pollutants in the form of exhaust emissions from vehicles and equipment. All emissions are primarily criteria pollutants or precursors. No violations of any applicable standard for any toxic air contaminant are anticipated.

Air Emission Tables in Appendix C, summarize the total emissions of criteria pollutants and precursors in the form of tons per year to facilitate comparison to our NEPA screening thresholds (denoted as evaluation criteria), and our de minimis thresholds for purposes of the General Conformity Rule. All project emissions are below the relevant thresholds. Therefore, no written conformity determination is required and impacts to air quality are determined to be less than significant.

Air Emissions at Pier 3

Exhaust emissions from the proposed action include those associated with transport of workers and vehicles to and from the site, as well as those produced at the site by equipment. Equipment emissions were calculated by identifying equipment used to date and projecting estimates with a fleet mix of equipment from similar projects. Equipment used in the dredging operations would create a temporary increase of pollutant emissions in the project area. Most of the equipment used, including the clamshell dredge has been specifically identified. The majority of the heavy equipment was powered with diesel fuel. In general, diesel-powered equipment emits higher rates of NOx, SOx, and PM_{10} than gasoline-powered equipment. Gasoline-powered equipment typically emits

greater amounts of hydrocarbons and CO. When equipment is initially started, some visible emissions are expected, as well as some exhaust odor.

Emissions from the heavy-duty equipment were estimated using the emission factors from various sources, including EPA's AP-42 Compilation of Air Pollutants Emission Factors (EPA 1985).

Each piece of stationary equipment used during the dredging requires a valid operating permit from the SDCAPCD. The SDCAPCD considers dredge equipment to be a portable but stationary source.[1] The clamshell dredge has a current permit to operate issued by the SDCAPCD. In processing the permit to operate, the SDCAPCD counts the time that the dredge is excavating at the project site. Emissions associated with transporting the materials to and from the LA-5 disposal site are not considered in the processing of the permit application, but they are considered in this analysis under tugboat emissions. The SDCAPCD evaluates stationary source for compliance with new source review regulations. This provides further assurance that the equipment will not cause significant air quality impacts. Emissions from equipment operating under permit are incorporated into the SIP.

Volatilization of chemicals from the dredged material to air is discussed in Section 4.5.2 of the Pier 3 Dredging EA (USDN, 1997). In this section it is concluded that no significant impacts can be expected based on the relatively low levels of volatile chemicals found in the dredged material.

Air Emissions at the CDF Site and Stockpiles

The list of chemicals in the document *Sediments Characterization for the Upland Disposal of Pier 3* (USDN 1996) indicates that the majority of contaminants are subject to emissions inventory reporting under the Air Toxic "Hot Spots" Information and Assessment Act of 1987 (AB2588). Because of the low- level concentrations present, the release of volatile and semi-volatile toxic chemicals to the air is not anticipated as a result of dredging and disposal. Therefore, there would be no significant impact from emissions resulting from the exposure of sediments to the air.

During Year 1, dredged material was transported to the quaywall on a barge, which was powered by a tugboat. A water pump was used to remove excess material from the edge of the barge. An excavator unloaded dredged material from the barge into a truck. The truck transported the material to the CDF and similar sites, serving as temporary stockpile locations. A backhoe, dump trucks, a second excavator, and other equipment were used to maintain the stockpile locations. When the material has dried and is ready for transport to the disposal site, a loader would transfer the sediment into transfer trucks at the site. The

[1] Dredging equipment for this project has been permitted and subject to NSR. More recently the SDCAPCD has determined that dredging equipment is non-stationary portable equipment. As such, in the future such equipment will be eligible for registration without undergoing NSR.

trucks would remove the material to the disposal location. These activities have potential to generate airborne dust. A number of mitigation measures will be implemented to ensure that fugitive dust impacts remain less than significant:

- Application of water to de-watered sediments in sufficient amounts to prevent the emission of fugitive dust during handling,
- Covering dump trucks transporting sediment to upland disposal sites, if necessary to prevent the emission of fugitive dust, and
- Designation of personnel to monitor project activities to ensure that fugitive dust emissions are minimal. These personnel will be responsible for ensuring that watering is performed as needed and trucks are covered as necessary.

Fugitive dust generation from heavy-duty equipment activities is estimated at 1.2 tons per acre per month of activity. A control efficiency of 50 percent is assumed from the on-site watering, which reduces the effective emission factor to 0.6 tons per acre per month of activity (EPA, 1985). The total area to be disturbed is estimated to be 405,825 square feet (128,625 sq ft in the CDF, 51,450 sq ft in the recycle yard, 147,000 sq ft in the boat yard, and 78,750 sq ft in the wharf builders yard, totaling 9.32 acres). In metric units, the total area to be disturbed would be approximately 37,702 m^2 which is 3.77 ha. The operation area is not exclusively a construction area and many of the thoroughfares are paved roads.

Additional characteristics further reduce fugitive dust emissions. Each stockpile area has remained undisturbed, covered and damp since placement. Second, the Baypoint Formation material is hard and consolidated. The material has not and will not be heavily disturbed through grading at the stockpile site. It will be loaded in large, damp clumps onto trucks for hauling. Due to these additional elements, the emission factor can be further reduced by 66% to 0.2 tons per acre per month (EPA 1985).

Additionally, fugitive emissions from the largest representative location of operation, the boat yard, were assumed for purposes of emission calculation. This gives a conservatively high figure, because it assumes that the entirety of the largest location will be the work location for the entire duration of the project. In fact, smaller area will be disturbed each day. Based on the area of the boat yard, monthly fugitive emissions are estimated to be 0.675 tons per month. Assuming approximately half of the fugitive emissions to be in the form of PM_{10}, this gives about 22.5 pounds per day. Even if we apply stationary source standards to fugitive dust, the emissions are well below the AQIA threshold of 100 pounds per day for PM_{10}. Therefore, the impact would not be significant.

Odorous substances potentially emitted from the facility include both inorganic and organic gases and particulates. Most of the odorous substances would be derived from chemical or anaerobic decomposition of the organic matter

contained in the sediments. Sediments are unloaded and dewatered in stockpile areas to prevent odors from transferring offsite.

The intensity of odors from sediments is anticipated to decrease with time as dewatering of the material occurs. Odors at the CDF and stockpile locations are minimized by preventing water from remaining in the sediments for extended periods of time. The most effective odor control measure would be proper facility management such as regular cleaning, continuous removal of water, and limiting wet sediment storage.

With implementation of upland disposal, additional vehicular traffic would occur from the project vicinity to the disposal sites. It is important to note that ozone is the most serious air pollutant problem in the region. Vehicular emissions are a source of ozone in the air basin.

With the implementation of upland disposal, the haul trucks would be expected to increase traffic to the disposal site. After the process of separating water from the sediments, the dewatered sediments would be loaded into the transfer trucks. Transfer trucks with dried sediments would be transported to the disposal site. According to the traffic impact analysis that was performed, the proposed project is expected to generate up to 250 truck roundtrips per day for a 5-day workweek. However, based upon the need to dispose of 27,000 CY (20,643 m^3) at an upland disposal facility, where Lakeside and El Corazon limit their receiving loads to 80 trucks per day, an 80 haul trips per day limit was used in analyzing haul trip emissions.

To determine the amount of truck emissions that would be attributed by the proposed project, emission estimates for trucks were prepared using BURDEN7F, the latest version of basin-specific emissions, which has been incorporated into the SIP. An estimate of the emissions associated with trucks is presented in Air Emission Tables of Appendix C.

Commercial or Industrial Reuse Air Emissions

The original EA did not specify the exact commercial or industrial reuse site. It was assumed that the dredged material would be transported a maximum of 80 miles (129 km) round trip. The revised analysis provided in this document gives the actual haul distances for material that has already been transported to Lakeside.

The distance for delivering dried sediments via transfer trucks varies depending on the location(s) of the reuse area. Because the emissions from vehicles are related to the number of vehicle miles traveled, the potential regional air quality impacts of vehicles is dependent upon the exact distance that trucks travel and the number of trips made.

Number of roundtrip miles for truck transfer is:

NAVSTA to Lakeside	42 miles (68 km)
NOLF to Lakeside	60 miles (97 km)
NAVSTA to El Corazon	76 miles (122 km)
NOLF to El Corazon	104 miles (167 km)

Based on the projected transfer of sediments, the emissions would fall below the *threshold* levels indicated in the Air Emission Tables of Appendix C. Therefore, impacts from emissions by implementing the reuse alternatives would not be significant.

Conformity Statement

The General Conformity Rule (40 CFR Parts 51 and 93) requires any federal agency responsible for an action to determine if its action conforms with guidelines and regulations pertinent to the SIP. A conformity determination demonstrating that the project would be in conformance with the SIP would be required if emissions exceed the *de minimis* levels associated with non-attainment pollutants. The estimated project emission calculations show that the project emissions would be less than the *de minimis* levels. Further, the emissions would be less than 10 percent of the emission budget for the area. Therefore, the project is exempt from a conformity determination and would not have a significant impact on air quality. Appendix C also contains a Record of Non-Applicability with regards to the General Conformity Rule.

3.6 Land Use

3.6.1 Upland Disposal Sites

Lakeside Land Company

Per the USDRIP EIR/EA, there are a variety of land uses proposed under the Specific Plan. The reclamation site is identified as future "Industrial" land use. This previous sand mining area is being filled in accordance with an approved Reclamation Plan. Any future industrial development at the site must meet County codes and standards, including the Lakeside Design Guidelines.

El Corazon Reclamation Area

The Negative Declaration indicates that the proposed end use of the reclamation area is open space. Manchester Development Corporation is pursuing the development of a hotel complex and golf course on the site. Due to the instability of the fill area, it is unlikely that the hotel complex would be sited on the fill portion of the site. Any future development of the site would be subject to additional environmental review and Oceanside City Council approval.

Use of either upland disposal site is consistent with intended land use; therefore, no significant impacts to land use would occur for the use of either site.

NOLF and NAVSTA Stockpile Areas
NOLF land use after the removal of dredge sediments would remain open space in the clear zone of the airfield. Removal of the stored material would not result in any discernible modification to land use in the region; therefore, impacts to land use would not be significant.

3.6.2 LA-5 Disposal Site
No impacts on land use in addition to those discussed in the original EA would occur at this disposal site. Therefore, no significant impacts would result.

3.7 Noise

Disposal of dredged material would result in a temporary increase in the amount of noise generated at the upland disposal site, the three sites currently stockpiling the material (NAVSTA, NOLF Imperial Beach, and Lakeside) and the haul routes between the sites.

3.7.1 Upland Disposal Sites
Lakeside Land Company
Based on the haul rate of 80 round trips per day, it is estimated to take about 21 days to remove the material from NAVSTA, and 8 days from NOLF Imperial Beach. Each site would be done at separate times meaning Lakeside, the disposal site, would be impacted for approximately 29 days from traffic noise and approximately 90 days for on-site screening operational activities. Noise related to disposal operations would be minimized by using properly sized and maintained equipment, using engine enclosures for construction equipment, and turning off equipment when not in use.

Increased truck traffic along the haul routes is expected to increase Community Noise Equivalent Level (CNEL) less than 1 dB. The increase would be minor and temporary; no significant impacts are expected to occur. Once disposal operations cease, ambient noise levels would return to existing conditions. No significant long-term noise impacts would occur with implementation of the Lakeside alternative.

El Corazon Reclamation Area
Noise impacts would be similar to those described for Lakeside except the transportation corridor would be different. Similarly, no significant noise impacts would occur because activity is short term (less than 30 days for hauling) and consistent with impacts addressed in the Negative Declaration for establishing the reclamation area.

NOLF and NAVSTA Stockpile Areas

For the NOLF site, the Navy has agreed to limit truck traffic to 80 trips per day which will minimize the level of construction noise experienced in the City of Imperial Beach. Hauling activity would only occur over a short period (approximately 8 days), and would therefore not constitute a significant noise impact.

NAVSTA sites are all within relatively heavily-used industrial areas. The construction noise would not likely be discernible beyond the NAVSTA fenceline and would not be considered to be significant.

3.7.2 LA-5 Disposal Site

No noise impacts in addition to those discussed in the original EA would occur at this disposal site.

3.8 Transportation and Circulation

The original EA included a general study of impacts related to truck hauls. The original EA determined that there would be no significant impacts to traffic, but recommended avoiding peak hours between 6:30 to 9:30 a.m. and 3:30 to 6:00 p.m.

Traffic studies were completed to address impacts related to the use of the NOLF site and the Lakeside Land Company site (Appendix D). The traffic analyses examined up to 250 round trips/day for all upland disposal alternatives. Note that after the traffic study was performed, the Navy determined that only 80 haul trips per day would be performed due to receiving site limitations. The first study analyzed traffic between NAVSTA San Diego and NOLF Imperial Beach, specifically examining traffic from I-5 onto Imperial Beach surface streets. The second study analyzed traffic between Lakeside Land Company and the Hanson Aggregates Pit (Which has since been rejected in Chapter 2).

All of these studies concluded that there would be no change in Level of Service from an additional 250 round trips/day. The studies conclude that there would be no significant impacts along any of the segments due to the short duration of the project. The studies recommend that trucking of material be changed from between 6:00 AM and 5:00 PM to 6:00 AM and 4:00 PM to avoid potential afternoon peak hour conflicts.

Although the traffic study investigated truck hauls between 6:00 a.m. and 5:00 p.m., it has been determined that truck hauls at night could further avoid traffic impacts. Analysis revealed that avoiding the afternoon peak hours between 4:00 p.m. and 6:00 p.m. would be sufficient to retain traffic impact below a level of significance for all haul routes. Truck hauls could occur at any other time of day.

The remaining dredged material consists of approximately 20,000 CY (15,291 m^3) of unconsolidated bay mud at NAVSTA, the 4,500 CY (3,441 m^3) of bay mud at NOLF plus the additional 2,500 CY (1,911 m^3) of extra soil that would be excavated, and the remaining 85,500 CY (65,370 m^3) Baypoint sediments at NAVSTA that would be sent to LA-5.To avoid the potential for spills or leaks of unconsolidated material during transport, the trucks used for hauling will be sealed and covered to prevent leakage. Any leakages or spills that occur may pose a possible road safety concern, but the material contains no hazardous materials or hazardous wastes that would pose a risk to human health or the environment. The Baypoint Formation material is very stable and much less likely to leak.

The contractor will implement quality control procedures to prevent spills of unconsolidated material. The contractor will implement the following actions:

1) After loading, trucks will be individually checked for leaks. Trucks that show signs of leakage will be either corrected or removed from the operation.
2) Trucks will be covered with a canvas tarp or other suitable alternative covering to help prevent spills.
3) Trucks that travel on city streets shall proceed at reduced speeds.
4) In the event of a spill, the contractor will immediately mobilize a sweeper and clean-up crew to remove the material.

In addition, Navy will periodically monitor the trucks en route to ensure that the contractor's quality control program eliminates leaks and minimizes the possibility of a spill.

3.8.1 Upland Disposal Sites

Lakeside Land Company

The best route from NOLF Imperial Beach and NAVSTA San Diego to Lakeside would run from I-5 to I-15 to SR-94 to I-8 to SR-67 to Riverford Road. The route along Coronado Avenue and 13th Street to access NOLF Imperial Beach would be the best route due to the good level of service along both Coronado Avenue and 13th Street and the spacing of signalized intersections. The truck haul assumptions are provided in Table 1. The USDRIP EIR/EA assumes 80 truck trips/day. Based on the findings of the USDRIP EIR/EA and the traffic analysis for the surface street ingress and egress at Lakeside, NOLF Imperial Beach and NAVSTA San Diego provided in Appendix D, there would be no significant impacts to traffic from this alternative.

El Corazon Reclamation Area

The transportation route to El Corazon is via I-5 to Oceanside Boulevard, and the immediate route exiting from NOLF and NAVSTA would be the same as that addressed for the Lakeside alternative. Traffic would be impacted by an additional 80 truck trips over approximately 30 days of hauling time. Due to the limited duration of impacts, no significant impacts would occur.

NOLF and NAVSTA Stockpile Areas
Traffic impacts for material leaving NAVSTA and NOLF are addressed above under the upland disposal sites and the LA-5 discussion.

3.8.2 LA-5 Disposal Site
No impacts to transportation and circulation in addition to those discussed in the original EA would occur at the LA-5 disposal site. Calculations estimate that 1 barge carrying approximately 2,000 CY (1,529 m^3) making 2 haul trips to LA-5 would require require 44 trips (22 days) to dispose of the 85,500 CY (65,370 m^3) of material that is suitable for ocean disposal. This limited activity is not expected to significantly impact vessel traffic in San Diego Bay or open ocean traffic out to LA-5.

3.9 Safety and Environmental Health

As stated previously in the "Water Resources" section of this document, the material is classified as inert material. All sediment data was provided in the previous EA for this project.

Munitions
Of the 72,000 CY (55,048 m^3) that were delivered to Lakeside for disposal, 44,000 CY (33,641 m^3) were screened for live munitions and 167 items identified. The table below summarizes the type and quantity of munitions found in the 44,000 CY (33,641 m^3) of screened material.

P-338s Munitions Inventory Beginning 10/11/99		
Total Found	**Model Name**	**Misc. Description**
2	MK 1	1.1" 75 cal
24	MK 2	40 mm
127	MK 4	20 mm
2	MK 5	Casings only
2	MK 9	3"
1	MK 23	3"
4	MK 32	5"
4.5	TNT Demo Block	4.5 lbs. Total

Placement of material at Lakeside was discontinued when incidental firearm rounds were discovered in the sediment. Lakeside Land Company asked the U.S. Navy to assure them that the dredged material is free of all "ordnance" (munitions), stating that an acceptable method of treating the material is to screen down to ½". The sediments would require preparations such as drying, turning and crushing to effectively screen the material. While the Navy was reasonably confident that inspection to date uncovered munitions of concern in the material, it decided it could not provide Lakeside Land Company an absolute

guarantee. The Navy pursued alternative upland disposal options where visual inspections would be acceptable in place of the more expensive physical screening. Alternative locations were considered, but rejected as discussed in Section 2.3. The Navy has since agreed to perform physical screening/visual inspection, which is deemed to be capable of removing all ordnance of concern, as proposed by the Lakeside Land Company. After screening dredged sediment from another project, Lakeside discovered that a 1/2" screen was not practical due to excessive clogging. Considering the shape of the munition items and the setup of the equipment (a vibrating screen on a steep angle) the increase from 1/2" to 1" is believed to be equally capable of removing the ordnance of concern.

There are safety and environmental concerns associated with disposal of dredged material that may contain munitions. The first concern is that munitions may present an explosive safety hazard. The safety hazards from dredged material handling have been calculated to be small and any possible hazards can be controlled. The discovered rounds were intact unfired munitions. The rounds were submerged for years and due to gradual seal degradation, the powder is most likely moist, inhibiting the potential for detonation. In its typical unfired condition the fuse of an individual round is not actuated and therefore has no means of initiation. Ordinary impacts on unfired munitions (such as dropping the round) are not likely to cause explosion or deflagration and therefore are not deemed to present a hazard. And while larger rounds do carry greater explosive power and therefore fragmentation risk, this risk is mitigated by the fact that larger rounds are less sensitive to initiation by external force than smaller rounds.

The safety hazards from munitions in the sediment are addressed by training the onsite dredge project workers. The Navy routinely works with explosives and has developed effective standards to prevent accidents. Explosive Ordnance Disposal (EOD) Units are the U.S. Navy experts for the disposal of waste military munitions (WMM). The EOD units typically educate military personnel on identification of munitions and explosive safety. EOD technicians will train onsite workers to recognize and identify different types of ordnance and explosive safety precautions. In addition, an explosive safety plan will be developed, and implemented, assuring all explosive safety standards of DOD Directive 6055.9, "DOD Ammunition and Explosive Safety Standards", are upheld.

The second concern is that the presence of small amounts of munitions in the sediment may be regulated under certain environmental laws.

Ammunition products produced or owned by the U.S. Department of Defense are regulated under the Military Munitions Rule (MMR) (62 FR 6621, February 12, 1997). Munitions are defined under 40 CFR 260.10 and the definition includes items such as explosive rounds and small arms rounds. A military munition is classified as hazardous waste (HW) if it is either a listed waste or exhibits a hazardous characteristic. The Department of Defense has tested small arms ammunition (less than fifty caliber) and these items were found to not exhibit a

reactive characteristic with respect to 40 CFR 261.23 (a)(6). See OSWER Directives 9442.1994 (06) (Nov. 3, 1994); 9443.1998 (07) (June 6, 1988); and 9443.1984 (10) (Nov. 30, 1984). Munitions rounds fifty caliber or greater may be reactive and the individual items may constitute a hazardous waste due to reactivity. Hazardous waste classification analysis of military munitions must also consider other hazardous waste characteristics such as toxicity and ignitability.

Toxicity Characteristic

One concern is that the munitions will leach chemical constituents. From the viewpoint of chemical composition, military explosives are divided into three classes; inorganic compounds, such as lead azide and ammonium nitrate; organic compounds, such as nitric esters (nitroglycerin and nitrocellulose), nitro compounds (picric acid and 2,4,6-trinitrotoluene (TNT)), nitramines, nitroso compounds, and metallic derivatives (mercury fulminate and lead styphnate) and; mixtures of oxidizable materials that are not explosive separately (black powder and pyrotechnic compositions). Nitrogen is present in practically all explosives. From a functional viewpoint, explosives are either : burning explosives, such as black powder, nitrocellulose and pyrotechnic compositions, which are susceptible to auto-combustion; or high explosives, such as TNT, lead azide and mercury fulminate, which are susceptible to detonation. There are many mixtures, subclasses and derivatives of explosives but most cartridge type munitions are mass-produced using common, inexpensive, readily available raw materials. The items discovered in the dredged material were cartridge type munitions, except for the Mark-25 flare; therefore the discussion will focus on the chemicals typically found in the manufactured cartridge type munitions.

Cartridge type ammunition has used, since well before WWII, smokeless powder as the propellant. The cartridge type ammunition (greater than and less than .50 caliber) is typically constructed as follows: the projectile is press-fit into the brass or metal casing, some waxy materials are used to reduce water penetration from dampness. Smokeless powder, also known as double base propellant, is solid material formed of nitrocellulose (nitrated cotton (NC)) and nitroglycerine (NG), with some added salts and stabilizers. The powder is typically about 60-80% NC, the balance NG, with around 1.5% of the minor components (e.g. ethyl centralite, 2-NDPA, DPA, KNO3). The NC is "gelatinized" with the NG; that is, the two have been closely mixed until they form a thermoplastic-like material, held together by hydrogen nucleophilic bonding, which is a stiff solid at room temperature. NC is completely insoluble and strongly resists degradation. NG, while soluble at around 1600 ppm in the pure form, is bound to the stiff, solid NC. The minor solid ingredients (salt, diphenylamine) are also tightly held within the NC/NG matrix.

In addition to the bulk propellant described above, each cartridge has a small primer, to initiate the propellant. This is the only somewhat soluble component in the ammunition, also constrained from leakage due to the gradual nature of

eventual seal degradation. For example, .38 caliber ammo has about .42 g of primer composition; .50 caliber has about 2.25 g. The primer composition varies but often includes lead styphnate and barium nitrate. Some military munitions contain explosives in the projectile of the munition. A check of the document SW030-AA-MMO-010, 2d Rev., Technical Manual, "Navy Gun Ammunition", 15 Dec 1992, shows 12 types of modern 40 mm ammunition with projectiles. Five are inert; the others contain 81.65 g of 2,4,6-trinitrotoluene (TNT). Other high explosive compounds historically used in cartridge type military munitions include; cyclo-1,3,5-trimethylene-2,4,6-trinitritramine (RDX or cyclonite), octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX or high melting explosive) and, tetryl.

Upon complete submersion, the seal of a cartridge may degrade over time and water may penetrate the cartridge casing. When black powder is mixed with water, nitrate dissolves leaving a nontoxic, nonreactive material. (United States Department of the Army. 1967. Military Explosives. Department of the Army Technical Manual TM 9-1300-214.) Nitrate is a concern when concentrations are greater than 10 mg/L, the EPA maximum contaminant level (MCL) for nitrate, in drinking water. Explosive and primer compounds generally have low solubilities and are generally considered toxic to varying degrees. For example, the EPA Office of Water, Drinking Water Regulations and Health Advisories (October 1996) advises that concentrations of TNT below 0.002 mg/L are not expected to cause adverse health effects. Mass transfer in and out of the casing is expected to be minimal, given the gradual nature of eventual seal degradation and the insolubility of the bulk propellant (smokeless powder). Once the pressure is equalized on the inside and outside of the cartridge, the water that manages to penetrate the cartridge will tend to remain trapped in the cartridge. Granted, it is possible for small nontoxic amounts of chemicals (mostly nitrate) to leach over long periods of time. The items discovered could not produce any accountable chemical concentrations that would cause representative samples of the dredged material to exhibit the toxicity characteristic.

Ignitability Characteristic

The characteristic of ignitability under SW-846, as pertaining to solids, is defined in 22 CCR §66261.21 (a)(2), as: "is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard." SW-846 Test Methods 1030, Ignitability of Solids, uses the following method to determine whether a solid waste when ignited, burns so vigorously and persistently that it creates a hazard: "The test material is formed into an unbroken strip or powder train 250 mm in length. An ignition source is applied to one end of the test material to determine whether combustion will propogate along 200 mm of the strip." The objective of the ignitability characterization procedures is to identify waste that either present a fire hazard

under routine storage, disposal, and transportation or is capable of severely exacerbating a fire once started.

As an example, if one were to cut open a cartridge type ammunition, form an unbroken strip with the propellant and primer compounds, then ignite the material, it likely would burn for 200 mm of a 250 mm strip. However, it should be noted that cutting open a shell is not representative of foreseeable dredged management activities. The same quality applies to small arms rounds, dry propellant and primer in a small arms round will ignite, but taken individually, a single small arms round does not contain enough material to "burn so vigorously and persistently" as to present a fire hazard. As for the Mark-25 phosphorous flare, this item is ignitable. A Mark-25 flare can readily ignite from an ignition source and if ignited, would burn vigorously and persistently. No external ignition sources will be present at disposal site. Moreover, the dredged material must be characterized, based on a representative mixture of soil and munitions. Considering the huge volume of dredged material and the number of munitions found to date, a representative sample would not be expected to exhibit ignitability.

Reactivity Characteristic

The greater concern is reactivity. The definition of reactivity in SW-846 is found in 22 CCR §66261.23 and includes the following criteria: "(1) readily undergo violent chemical change; (2) react violently or form potentially explosive mixtures with water; (3) generate toxic fumes when mixed with water or, in the case of cyanide- or sulfide-bearing wastes, when exposed to mild acidic or basic conditions; (4) explode when subjected to a strong initiating force or heated under confinement; (5) explode at normal temperatures and pressures; or (6) fit within the Department of Transportation's forbidden explosives, Class A explosives, or Class B explosives classifications."

This definition of reactivity is intended to identify wastes that, because of their extreme instability and tendency to react violently or explode, pose a problem at all stages of the waste management process. The definition is to a large extent a paraphrase of the narrative definition employed by the National Fire Protection Association (NFPA). The agency chose to rely almost entirely on a descriptive, prose definition of reactivity because most of the available tests for measuring the variegated class of effects embraced by the reactivity definition suffer from a number of deficiencies. Hundreds of different procedures/methods have been used to determine the reactivity of different munition items and the setup depends highly on the particular item to which the test is used. In the previously cited OSWER Directives (acknowledging that cartridges less that .50 caliber are not reactive), the U.S. EPA cites the results of three different types of reactivity tests. First is heating under confinement, raising the item to 160 F for 48 hours. The second test is dropping the item from 5, 7, and 40 feet. The third test is the

Sporting Arms and Ammunition Manufacturer's Institute (SAAMI) impact test where a steel ball is dropped on a pin positioned over the primer.

The reactivity criterion that is most applicable to the munitions in the sediment is "capability to explode when subjected to a strong initiating force." Under the current conditions, the sediment will not experience elevated temperatures and an impact on the primer is highly unlikely given that the dredged sediment is being moved with heavy construction equipment. The primer is very small, requiring something like a firing pin to set it off. An excavator bucket would more likely impact the casing. Larger caliber munitions may in fact explode if subjected to a large initiating force, such as the bucket of an excavator. This is not to say that all munitions larger than small arms are reactive. Many munitions (including munitions greater than fifty caliber) that are manufactured and used by the DoD contain only small amounts of propellants and would not react even if subjected to a strong force. The explosive characteristic is inherent with high explosive rounds --i.e., rounds that contain TNT or rounds with large amounts of propellants.

The dredged material must be characterized based on a representative mixture of soil and munitions. In light of the very large volume of dredged material and the number of potentially reactive rounds discovered to date, classification of the dredged material as reactive waste is unwarranted.

The Naval Ordnance Safety and Security Activity (NOSSA) reviewed explosive safety concerns for this project, using data compiled from this project, to date, as to the types and amounts of munitions encountered and volumes of dredged material in which they were encountered. The explosive safety experts made a determination that the expected density of munitions predicted to be encountered in dredged sediment destined for upland disposal does not exceed the acceptable risk threshold (*i.e.*, the material does not present a significant explosive hazard)[2] The density (number and type of munition items per volume of dredged material) of munitions was determined by keeping an inventory of found munition items while screening the first 44,000 out of a total 184,500 CY (141,062 m^3) of dredged material from the P-338s project area. Considering the "likelihood of initiation," and the "probability of fragment hit given an explosion," in conjunction with the expected handling activities, a quantitative evaluation with qualitative safety factors calculated a low explosive hazard risk for this material. Setting up and following explosive safety SOPs (standard operating procedures) that will train and protect workers will effectively manage the limited risk. In addition, physical screening of the dredged material at the upland disposal site or at the Naval Station will allow the Navy to: 1) prevent land disposal of ordnance items of concern through removal of such items; and 2) to maintain an ongoing inventory of discovered munition items to ensure the density of munitions does not approach or exceed the acceptable risk threshold.

[2] Since the degree of explosive risk and the reactivity criterion are closely-related for these munitions, the calculated threshold is also used for waste classification purposes.

Other Regulatory Hazardous Waste Classification Issues

For the dredged material awaiting upland disposal, sediment chemistry analyses were performed as part of the determination of the sediment quality. See discussion on sediment quality in the "Water Quality and Hydrology" section of this document. The dredged sediment, prior to the discovery of munitions, was classified as "inert." With munitions present, it has the potential to exhibit one or more hazardous waste characteristics. However, based on the foregoing discussion, and the additional screening to be performed at the upland disposal site or at the Naval Station, the dredged material continues to be classified by the Navy as inert waste.

3.9.1 Upland Disposal Sites

Lakeside and El Corazon Reclamation Areas and NOLF and NAVSTA Stockpile Areas

The most appropriate action to ensure protection of the environment, the public, and property is to physically screen the dredge material to 1" either at the stockpile site or at the disposal site. Physically screening is a costly and labor intensive process. However, the Navy will screen all Pier 3 dredged material planned for disposal at an upland disposal site. This is the only method identified by the upland disposal site managers as acceptable for placement of the material. Once a disposal site is selected, a site specific explosive safety plan will be developed based upon munitions found to date in P-338s sediments. The local EOD unit will train onsite workers on how to spot munitions and explosive safety as it pertains to this project.

Contaminant Pathways

The original EA (USDN, 1997) included a contaminant pathways analysis for upland sediment disposal. The analysis is slightly modified here to examine potential contaminant pathways from disposal.

- Effluent Discharges. The unconsolidated material (~42,500 CY (32,494 m^3)) has been dewatered (>50% solids) at the CDF at NAVSTA San Diego, so there would be no effluent discharged. The Baypoint Formation material, which is currently stockpiled, is dredged up in very dense clumps, which are essentially dewatered. Therefore, it is estimated that there would be no effluent discharged from either the unconsolidated or consolidated dredged material once it is taken to an upland disposal site.
- Surface Runoff. Surface runoff over the material placed at the upland site would terminate at the bottom of a deep pit. The dredged material would eventually be covered by more inert material and then topsoil as outlined in the reclamation plans for the sites.

- Leachate. Soluble Threshold Limit Concentration (STLC) analysis was run to determine if the low levels of metals or PCBs would leach from the material

into groundwater. No PCBs were shown to leach from the material. Copper was the only metal detected by the instruments, but the copper levels were below the STLC criteria, which also demonstrates that no metals leach from the sediment. In adopting Waste Discharge Requirements for Pier 3 Dredging, the RWQCB classified the dredged material as inert and in compliance with concentration limits established in Appendix D of the Basin Plan.

- Plant and Animal Uptake. The dredged material would be protected from uptake of contaminants by plants and animals. As demonstrated in the sediment testing, the material is classified as inert. During Pier 3 disposal operations materials would be continually placed (up to 80 loads/day) in the pit and not allow colonization to occur. Once dredged material is placed, normal reclamation activities would continue burying the Pier 3 dredged material.

- Volatilization to Air. Volatilization of chemicals from the dredged material to air is discussed in Section 4.5.2 of the original Pier 3 Dredging EA (USDN, 1997). In this section it is concluded that no significant impacts can be expected based on the relatively low levels of volatile chemicals found in the dredged material. This remains unchanged.

Sufficient data has been collected from the dredged material to make determinations regarding human health and ecological concerns. In order for a risk to either human health or the ecology to be present it needs to be determined if there is a completed pathway to a receptor.

Based on the above situation, no pathways for exposure exist and therefore no risk to human health or the ecology exists.

3.9.2 LA-5 Disposal Site

The stockpiled material proposed for ocean disposal consists of Baypoint Formation material dredged from the south side of Pier 3 and stockpiled in March/April 1999 under Department of the Army permit number 97-20146-DZ. The Baypoint Formation material is relatively dense with very low water content. The Baypoint Formation was deposited over 8,000 years ago; therefore, the material was removed from pollution sources at the time of its original deposition. The stockpiles are contained by low berms of clean material. In addition, they are underlain and overlain with 10-mil thick impervious sheeting.

Under the original permit, Baypoint Formation material was determined to be suitable for ocean disposal. However, the permit required that Pier 3 dredging include a minimum 0.5 foot (0.15 m) overdredge (buffer zone) beyond the unconsolidated sediment (to be disposed upland) into clean Baypoint Formation material (to be disposed at LA-5). This project dredged the upper unconsolidated bay mud using the environmental cable arm bucket dredge and placed it in the

upland CDF and a disposal site in accordance with Appendix D of the San Diego Regional Water Quality Control Board Basin Plan. The Baypoint Formation including most of the buffer zone material was dredged using a heavy clamshell dredge and placed in temporary stockpiles. It is likely that very small amounts of unconsolidated bay mud were left behind; and therefore a possibility exists of slight mixing between consolidated and very small amounts of unconsolidated material.

Appendix B is the Sampling and Analysis Plan that explains the testing the Navy intended to conduct in order to determine ocean disposal suitability of the stockpiled dredged material. The sediment testing results, published in the *P-338s, Evaluation of stockpiled Baypoint Formation Material for Ocean Disposal*, December 1999, verify that the material is suitable for the LA-5 disposal site based on Green Book Tier I evaluation. Comparison of the physical characteristics of the stockpiled dredged material with ocean disposal reference site sediments indicated that the sediments are almost identical. Further analysis determined the dredged material is chemically uncontaminated (USDN 1999).

Ocean dumping regulations recognize that that dredged material may contain incidental debris. In this case the incidental debris may include a small amount of munitions. The presence of munitions is highly unlikely since the material is clean Baypoint Formation and very little mixing with unconsolidated bay mud has occurred. In past projects, the possibility of incidental munitions has not prevented the Army Corps of Engineers and EPA from allowing dredged material disposal in the Ocean. As previously discussed, the presence of munitions is not expected to confer toxicity to the material. In addition, any munitions that happen to be placed there will not be a health and safety risk as it will be under more than 600 feet (183 m) of water. Concurrence of ocean disposal suitability has been received from the Army Corps of Engineers and EPA as shown in Appendix A.

3.10 Cumulative Impacts

One reasonably foreseeable project which may include upland disposal of dredged material is P-326, Deep Draft Power Intensive (DDPI) Ship Berthing/Logistics/Maintenance Pier. P-326 is a Naval Station San Diego dredging, construction, and demolition project scheduled for fiscal year 2001. P-326 dredging is planned to begin in November 2001. Pier 3 dredged material disposal is scheduled for completion in February 2001. Construction for P-326 (including hauling and disposal) would not overlap with the Pier 3 construction schedule. Therefore, there would be no cumulative impacts to the San Diego Bay region. This project and other in-water construction projects are addressed in the original EA.

P-326 dredging has an estimated volume of 48,000 CY (36,699 m^3) of material that could require upland disposal. The sediment quality from P-326 is expected

to be similar to the material from Pier 3. The sediment column would consist of a layer of unconsolidated sediment on top of Baypoint Formation material. The leachability of any contaminants in the sediment is expected to be the same as Pier 3. The disposal site for P-326 material has not yet been determined, but the material could be placed at one of the sites indicated below.

3.10.1 Upland Disposal Sites

Lakeside Land Company

The Lakeside Caster Joint Venture Reclamation Plan (RP-97-001) dated January 1998 indicates that the site has a capacity for approximately 1.1 million CY (841,018 m^3). It is estimated that the site will be importing material over the next 10 years. It is likely that the site will be available for future Navy dredging projects in addition to its steady stream of fill material being placed at the site.

Due to the capacity of the Lakeside site, it is foreseeable the Navy would use the site in the future for disposal of dredged material. Assuming the material would meet the disposal requirements for the Lakeside site and a similar disposal/transportation rate as Pier 3, the truck-hauling phase would last approximately 29 working days.

The reclamation plan includes slope stability measures to protect against erosion as fill activities come to a conclusion.

Air, biology and water resource impacts would not be cumulatively significant since individual project impacts are all short-term and do not overlap is space or time.

The biological issues at Lakeside for P-326 would be about the same as for Pier 3. As fill material is placed higher and higher in the pit, there is increasing concern with surface runoff affecting the adjacent riparian area associated with the San Diego River located to the south of the fill area. The reclamation plan includes erosion control measures such as compaction, sedimentation basins, and hydroseeding.

Just as with Pier 3, there would be no cumulative impacts to cultural resources or land use from future fill activities at the site from P-326 construction.

Impacts to air quality would not be significant since Pier 3 and P-326 dredging and disposal activities do not overlap. Emission rates can vary considerably, depending on schedule of operation by season and concurrent timing of project construction periods, due to regional dispersion effects. Pier 3 dredging and disposal is planned for completion in November 2000 and P-326 is not scheduled to begin until May 2001. Furthermore, a cap on the daily haul rate to the Lakeside Land Company limits transport to 80 hauls per day and thereby, limits air emissions associated with transport. Emissions at Lakeside from disposal

operations are not expected to exceed the hourly, daily, or annual significance criteria.

Air emissions associated with Pier 3 from dredging, truck hauls, and equipment at the dredging and rehandling site are expected to be below de minimis thresholds, as shown on Table 1. When transport of P-326 dredged material occurs, it would be hauled at approximately the same rate as Pier 3 material, and would therefore have similar daily air emissions rates. Transport of material for disposal from Pier 3 is scheduled for completion approximately 5 months before field activity on P-326 is initiated. Cumulative impacts to air quality associated with disposal activities are not anticipated. Nevertheless, detailed analyses of annual air emissions associated with P-326 are in preparation through the DDPI EIS.

Land use at the Lakeside site would eventually change once reclamation activities are completed under future projects. Per the USDRIP EIR/EA, the disposal site is identified as future "Industrial" land use. Any future industrial development at the site must meet County codes and standards, including the Lakeside Design Guidelines.

No significant cumulative noise impacts are expected from Pier 3 and P-326 dredging and disposal activities since these projects will not overlap and a cap on the haul rate limits disposal operations at the Lakeside Land Company. Noise impacts from P-326 would be limited to Naval Station San Diego where the dredging and loading would occur, the haul route from Naval Station San Diego to Lakeside, and the Lakeside site. Since 1) the loading and disposal sites are industrial; 2) the increase in CNEL along the haul route would be expected to be less than 1 dB; 3) disposal operations would last approximately 29 days; and 4) noise related to disposal operations would be minimized by using properly sized and maintained equipment, using engine enclosures for construction equipment, and turning off equipment when not in use, no significant noise impacts would be expected.

Cumulative traffic impacts from Pier 3 and P-326 would be non-significant since these projects will not overlap and the haul rate to Lakeside is capped, limiting daily traffic. Traffic from P-326, assuming the same disposal rate as Pier 3, would not change the level of service along the truck route from Naval Station San Diego to the Lakeside site. Since truck hauls would be temporary and there would be no change in the level of service, traffic impacts would be non-significant.

The sediment quality for P-326 is expected to be about the same as Pier 3 with regards to munitions. P-326 would include similar screening protocol to Pier 3 to be reasonably sure that the dredged material does not contain munitions.

El Corazon Reclamation Area

As with the Lakeside alternative, no significant cumulative impacts are identified. This site is however, under consideration by the Manchester Corporation for development of a hotel and golf course complex. Due to soil stability constraints, the fill area would underlie the golf course. If the Manchester Corporation purchases the real estate, the site would no longer be available as a disposal site. Adjacent operations at the "Green Waste" site which recycles yard wastes are on-going and would not elevate impacts to a level of significance. Future construction of the proposed Rancho Del Oro Drive aligned along the eastern edge of the reclamation site is currently unprogrammed and is not likely to overlap with the 29 proposed haul days for dredge sediment disposal. Based upon a review of proposed activity in the El Corazon area, no significant impacts were identified.

3.10.2 LA-5 Disposal Site

The LA-5 Ocean Dredged Material Disposal Site has been established for continued disposal of dredged materials that comply with EPA's Ocean Dumping Regulations and Corps Permitting Regulations. The disposal of materials suitable for ocean disposal from the projects listed in the original EA, especially P-326, would be within the scope of the original environmental impact analysis for the site and would not have significant cumulative effects to the environmental including biological resources, marine resources and water quality.

4. References

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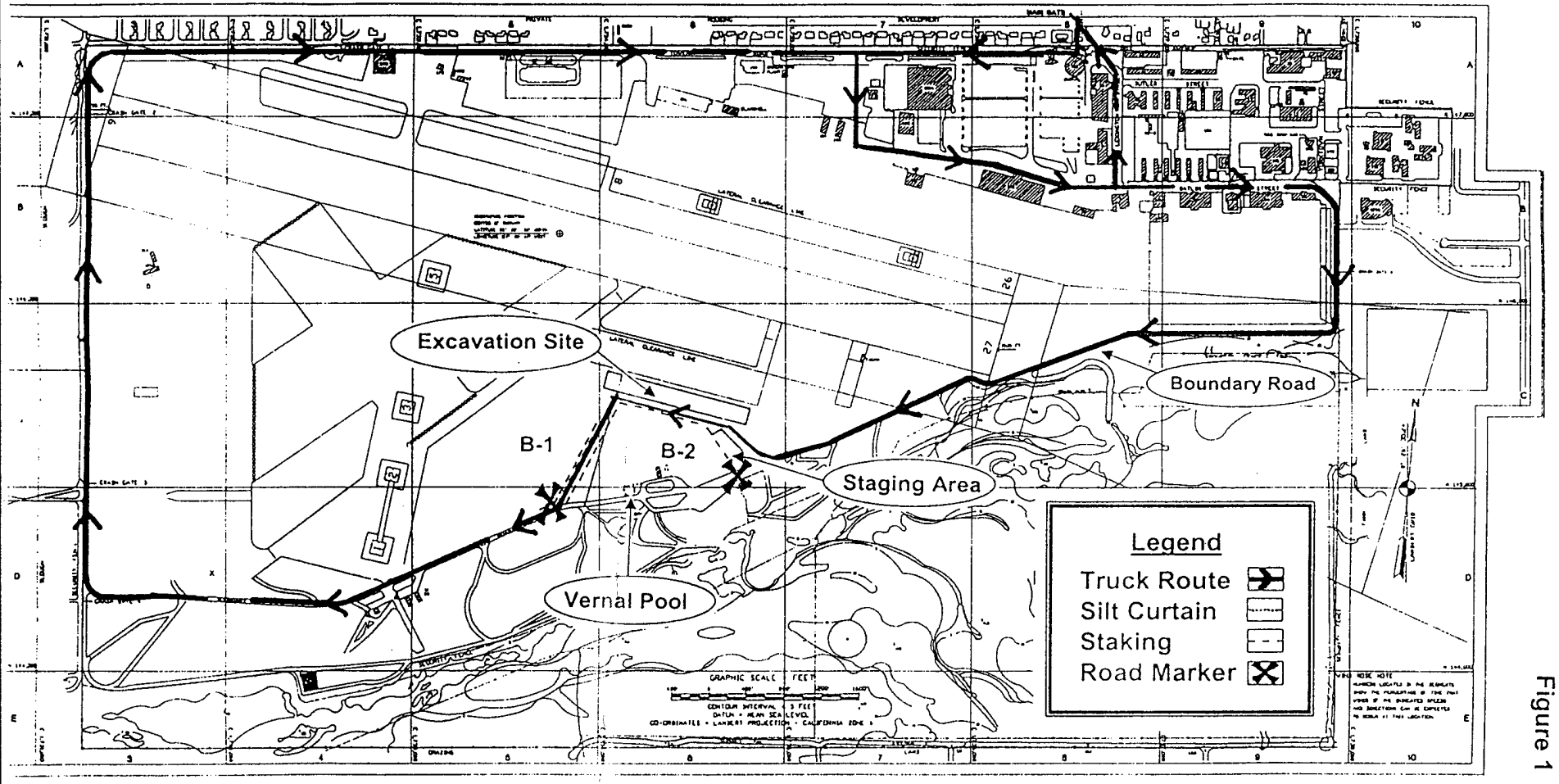
United States Environmental Protection Agency (US EPA). 1985. Compilation of Air Pollutant Emission Factors AP-42, Volumes I and II.

5. List of Preparers

Patrick McCay	SOUTHWESTNAVFACENGCOM	Environmental Planner
Kathie Beverly	SOUTHWESTNAVFACENGCOM	Environmental Engineer
Rick Basinet	SOUTHWESTNAVFACENGCOM	Environmental Engineer
Mark Bonsavage	SOUTHWESTNAVFACENGCOM	Environmental Engineer
Grace Peñafuerte	SOUTHWESTNAVFACENGCOM	Environmental Planner
Ann Rosenberry	SOUTHWESTNAVFACENGCOM	Environmental Planner
Mike Petersen	SOUTHWESTNAVFACENGCOM	Environmental Planner
Mitch Perdue	SOUTHWESTNAVFACENGCOM	Soil Conservationist
	Linscott, Law and Greenspan, Engineers	Traffic Studies

Figures

Naval Outlying Landing Field, Imperial Beach



02/10/00 5SPR.GP

Figure 1

Appendix A

Letters of Concurrence

United States Department of the Interior
Fish and Wildlife Service
Ecological Services
Carlsbad Fish and Wildlife Office
2730 Loker Avenue West
Carlsbad, California 92008

Ann E. Rosenberry
Long Range Planning/Real Estate Team Leader
Department of the Navy
South Bay Area Focus Team
Naval Facilities Engineering Command
2585 Callagan Highway
San Diego, California 92136-5198

MAR 13 2000

Attn: Ms. Grace Peñafuerte

Re: Disposal of Dredged Materials at Naval Outlying Landing Field, Imperial Beach, California.

Dear Ms. Rosenberry:

The Fish and Wildlife Service (Service) has reviewed U.S. Navy's letter dated February 11, 2000 concerning a plan to remove dredged materials that were disposed at Outlying Landing Field (Outlying Field) Imperial Beach, California in early March 1999. Your letter requested concurrence from the Service that the proposed Navy plan to remove the dredged materials would not have significant adverse impacts to biological resources.

The dredged materials were excavated from a berthing area adjacent to Pier 3, Naval Station, San Diego Bay. In Service letters dated March 4 and April 12, 1999, we informed Patrick McCay, Environmental Planner, Navy that the disposal operations may result in impacts to listed species. Potential listed species that may occur on-site and could be affected by the proposed action included the federally endangered Pacific pocket mouse (pocket mouse) and the San Diego fairy shrimp (fairy shrimp). We were also concerned with potential impacts to biological resources that utilize Tijuana Slough National Wildlife Refuge (Wildlife Refuge). The Wildlife Refuge lies immediately south and west of Outlying Field.

Specific measure were outlined in your letter to avoid impacts to habitat that has the potential to be occupied by the pocket mouse and fairy shrimp. We can concur with your finding of no significant affect to biological resources from the proposed action provided: (1) a biological monitor familiar with vernal pool habitat is on-site to oversee the excavation operations, (2) measures identified in your letter dated February 11, 2000, be slightly modified to clarify or emphasize key points in protecting sensitive habitats or biological resources, (3) the measures be written as specific conditions that must be adhered to by any contractor performing the excavation project, and (4) a burrowing owl survey be conducted to determine the presence or absence of this species in the project area. Provided the following measures are incorporated into

the project and agreed to by the contractor, we believe there will be no significant affect to biological resources from the proposed action.

(1) A biological monitor familiar with vernal pools shall be on-site during the excavation and removal of dredged material from Naval Outlying Landing Field. The purpose of the biological monitor is to place cones and/or stakes to mark vehicle and construction equipment access and staging areas, routes, and delineate areas of sensitive habitat for federally listed species. The biological monitor shall place silt curtains to ensure sediments disturbed during excavation do not enter the vernal pool or its watershed. The biological monitor shall oversee contractor operations to ensure the project avoids impacts to biological resources.

(2) All construction equipment and vehicles shall be confined to the truck route, staging area, excavation site shown in Figure 1 of your letter dated February 11, 2000. The route to be utilized by construction equipment and trucks to and from the excavation site to Boundary Road shall be staked or marked. The boundaries of the staging area that will be utilized by construction equipment and vehicles shall be marked. These areas shall be clearly defined by the biological monitor prior to the initiation of the project.

(3) Fence(s) or silt curtain(s) to prevent sediment from entering any portion of the vernal pool or its watershed that is not protected by an existing bunker shall be erected and in-place prior to and during excavation operations. At least one fence or silt curtain shall be placed in an existing drainage swale located northwest of the vernal pool. A separate fence or silt curtain shall be placed along the southwestern boundary of the excavation area. These fences shall be erected and in-place prior to and during the entire excavation operation.

(4) Physical markers or barriers shall be place on Boundary Road to the east and west of the vernal pool to prevent truck construction equipment or car access to this area. The location of the physical markers or barriers is shown in Figure 1 of your letter dated February 11, 2000. The physical markers or barriers shall be in-place prior to and during the entire excavation operation.

(5) Excavation operations shall be limited to the footprint of the previous disposal area and an area 75 feet south of the disposal area. The limits of the excavation area shall be clearly marked by the biological monitor.

(6) All loading of trucks with excavated dredged materials shall occur 400 feet north of the vernal pool. Once excavation materials are loaded into trucks, the contents shall be covered with a canvas tarp or other suitable covering acceptable to the Navy to prevent any spillage of materials being hauled.

(7) The staging area for the contractor vehicles, trucks and equipment shall be 300 feet east of the vernal pool.

(8) All construction trucks entering Naval Outlying Landing Field shall be empty of excavation materials and shall be throughly washed down at Lakeside Caster JV Reclamation Area prior to re-entering the above listed Naval base.

(9) The finish grading for the excavation site shall be contoured in such a manner that minimizes the runoff of any sediments that could result from local storm events. The biological monitor for the Navy shall approve the final grading work and clean-up of the project area when the contractor completes the work but before they vacate the job site.

(10) Prior to initiation of excavation activities, Naval Outlying Landing Field shall be surveyed for the presence or absence of burrowing owls. If burrowing owls are found in the area to be disturbed by construction activities, construction operations shall not commence during the nesting season for this bird species (i.e. March through August).

As a final note your letter discussed revegetation of the excavation site and all areas disturbed by truck traffic with Zorro annual fescue (*Vulpia myuros*). A "Checklist of the Vascular Plants of San Diego County", 2nd Edition, by Michael G. Simpson et al. identifies *Vulpia myuros* as not being native to the county (Attachment 1). Based on the information provided in this publication, we recommend use of *Vulpia octoflora* var. *hirella* or *Vulpia octoflora* var. *octoflora* for the revegetation effort for this site.

Please notify Martin Kenney or my staff if the recommended additions and modifications to your proposed measures to protect biological resources are acceptable to the Navy and can be incorporated into the proposed action. Please contact Mr. Kenney at (760) 431-9440 if you have any questions regarding this letter.

Sincerely,

Nancy Gilbert

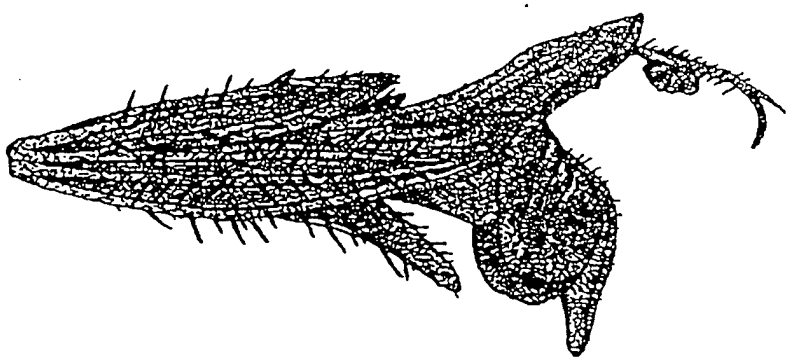
Nancy Gilbert
Assistant Field Supervisor

SE# 1-6-00-I-31

cc: Tijuana Slough NWR, Imperial Beach, CA. (Attn: Rebecca Young)
City of Imperial Beach, Imperial Beach, CA. (Attn: Patrica McCoy)
Regional Water Quality Control Board, San Diego, CA. (Attn: John Roberts)

CHECKLIST OF THE VASCULAR PLANTS OF SAN DIEGO COUNTY

2nd Edition



by Michael G. Simpson, Scott C. McMillan,
Brenda L. Stone, Judy Gibson, and Jon P. Rebman
San Diego State University and
San Diego Natural History Museum

Spartina foliosa	California Cord Grass	
Sphenopholis obtusata!	Prairie Wedgegrass	2 2-1-1 CEQA
[Collected in Cuyamaca Mtns., Palmer 406, UC 120918]		
Sporobolus airoides	Alkali Sacaton	
[S. a. var. wrightii (Munro ex Scribner) Gould]		
Sporobolus cryptandrus	Sand Dropseed	
Sporobolus flexuosus	Mesa Dropseed	
*Sporobolus indicus**	Smutgrass	
[S. poiretii (R. & S.) Hitchc.]		
*Stenotaphrum secundatum**	Saint Augustine Grass	
*Triticum aestivum**		
[Note: not cited in The Jepson Manual, 1993]		
*Vulpia bromoides**		
Vulpia microstachys var *ciliata*		
Vulpia microstachys var. *confusa*		
Vulpia microstachys var. *pauciflora*		
Vulpia myuros var. *hirsuta**		
Vulpia myuros var. *myuros**		
Vulpia octoflora var. *hirtella*		
Vulpia octoflora var. *octoflora*		
*Zea mays**		
[Note: not cited in The Jepson Manual, 1993]		

Pontederiaceae - Pickerel Weed Family

*Eichhornia crassipes**		

Potamogetonaceae - Pondweed Family

Potamogeton foliosus var. *foliosus*	Leafy Pondweed	
Potamogeton illinoensis	Shining Pondweed	
Potamogeton nodosus	Long-Leaved Pondweed	
Potamogeton pectinatus	Pennel-Leaf Pondweed	
Potamogeton pusillus var. *pusillus*	Small Pondweed	
Ruppia maritima	Ditch-Grass	

Themidaceae [Liliaceae, sensu The Jepson Manual, 1993] - Brodiaea Family

Bloomeria crocea ssp. *crocea*	Common Goldenstar	
Brodiaea filifolia	Thread-Leaved Brodiaea	1B 3-3-3 CE/PT†
Brodiaea jolonensis		
Brodiaea orcuttii	Orcutt's Brodiaea	1B 1-3-2 /C2†
Brodiaea terrestris ssp. *kernensis*		
Dichelostemma capitatum ssp. *capitatum*	Blue Dicks	
[D. pulchellum (Salisb.) Heller]		
Muilla clevelandii	San Diego Goldenstar	1B 2-2-2 /C2†
Muilla maritima	Common Muilla	

Environmental listing information is based on *California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (Mark W. Skinner & Bruce M. Pavlik, eds., 1994, 5th edition). The number and letter code from the *CNPS's Inventory* is explained on the inside, back cover. In cases where a subspecific taxon is not recognized in *The Jepson Manual*, but is recognized and listed in the *CNPS's Inventory*, state/federal status is indicated for the synonym.

Federal listing changes by the U.S. Fish and Wildlife Service (FWS) in the Federal Register (1996, Vol. 61, No. 40) are indicated by a "†" symbol. This register includes an updated plant list as well as a notice that the federal candidate species (C1,C2,C2*,C3a,C3b,C3c) for federal listing are no longer recognized by the FWS. This checklist will continue to follow the *CNPS's Inventory* (Skinner & Pavlik, 1994), which recognizes the federal candidate listing status; however, updated listing information will follow the recent FWS changes.

The following symbols are used in the checklist:

* indicates that the species is not native to the county, but has become naturalized (persisting or spreading in non-cultivated areas).

! indicates that the species is an addition to the county not cited in *A Flora of San Diego County*.

? indicates that the species is doubtfully found in the county and has probably been misidentified in the past.

[ ] cites synonyms of *A Flora of San Diego County* and/or pertinent notes.

† indicates federal listing changes by the U.S. Fish and Wildlife Service in the Federal Register. 1996. Vol. 61, No. 40.

Appendix 1 relists those species that are additions to the county not cited in *A Flora of San Diego County*.

Appendix 2 relists those species that are doubtfully found in the county and have probably been misidentified in the past.

We would appreciate and encourage notification of any additions or corrections to this checklist. Send to Dr. Michael Simpson, Dept. of Biology, San Diego State University, San Diego, CA 92182-4614 (SDSU Herbarium: 619-594-8012, email: msimpson@sunstroke.sdsu.edu) or to Dr. Jon Rebman, San Diego Natural History Museum, P.O. Box 1390, San Diego, CA 92112-1390 (SD Herbarium: 619-232-3821, ext. 229; email: sdnhmrebman@earthlink.net).

We thank Jerilyn Hirshberg and Duffie Clemons for noting or discovering numerous additions to our county flora in their work, "A Botanical Checklist of the Cuyamaca and Laguna Mountains" (1996). We also thank Dr. Geoffrey Levin (Illinois Natural History Survey) for earlier information on many of the additions and misidentifications. Finally, we thank Frankie Harriss, Theresa Wilkinson, Shari Sitko, and Darren Burton for their help in typing and editing various versions of this checklist.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

February 28, 2000

Colonel John P. Carroll, District Engineer
U.S. Army Corps of Engineers, Los Angeles District
Regulatory Branch
ATTN: Mark Tucker (CESPL-CO-R)
P.O. Box 532711
Los Angeles, CA 90053-2325

re: Department of the Army Permit 97-20146-DZ Proposed Modification

This letter is in response to a request by the U.S. Department of the Navy, Southwest Division Naval Facilities and Engineering Command for a modification of U.S. Department of the Army permit 97-20146-DZ. Actions authorized by the Department of the Army permit that have been completed to date include the dredging and disposal of approximately 110,000 cubic yards of dredged material to a confined disposal facility located at Mole Pier at the Naval Station. Additionally, approximately 85,500 cubic yards of material Bay Point formation material was dredged and stockpiled at the Naval Station; the Department of the Army authorized 50,000 cubic yards of these materials for disposal at the EPA designated LA5 ocean disposal site.[1] The permit modification would increase the volume of material authorized for ocean disposal from 50,000 cubic yards to 85,500 cubic yards.

EPA's review of the proposed permit modification was conducted in accordance with the Federal guidelines (40 CFR 230) published pursuant to Section 404 of the Clean Water Act (CWA), Section 103 of the Marine Protection, Research and Sanctuaries Act (MPRSA) and Section 10 of the Rivers and Harbors Act.

In support of the proposed permit modification, the Navy conducted physical and chemical evaluations of the dredged and stockpiled materials pursuant to the standard methods outlined in the joint Corps and EPA Testing Manual (Evaluation of Dredged Material Proposed for Ocean Disposal). A December 1999 report (P-338S, Evaluation of Stockpiled Bay Point Formation Material for Ocean Disposal, U.S.Naval Station San Diego, California), prepared by Southwest Division, Naval Facilities and Engineering Command, South Bay Area Focus Team, U.S. Department of the Navy, presents the results of this evaluation.

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[1] For the original permit, the Bay Point Formation material was determined to be suitable for ocean disposal on the basis of the exclusionary criteria provided at 40 CFR Section 227.13.

Based on the December 1999 report, EPA concurs that the materials are suitable for disposal at the LA5 ocean site. Additionally, EPA concurs on the proposed permit modification to increase the volume of material disposed of at LA5 to 85,500 cubic yards.

Thank you for the opportunity to review and comment on this proposed permit modification. If you have any questions about EPA's review, please contact Steven John of my staff at at 213/452-3806.

Sincerely,

for Tim Vendlinski, Chief
Wetlands Regulatory Office

cc: Navy
USFWS
NMFS
RWQCB
CDFG

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

March 1, 2000

REPLY TO
ATTENTION OF:

Office of the Chief
Regulatory Branch

Francis Wiegand
U.S. Naval Station San Diego
3395 Strurtevant Street, Suite G
San Diego, California 92136

Dear Commander Wiegand:

Reference is made to your request dated August 12, 1999 to amend Permit No. 972014600-MAT which authorized you to 1) dredge approximately 160,000 cubic yards (cy) of material over a 3.2 acre area from existing depths of -30 to 33 ft mean lower low water (MLLW) to -37 ft MLLW (with a 2-ft overdredge allowance); 2) transport and dispose of 50,000 cy of the dredged material at LA-5; 3) transport and dispose of 110,000 cy of the dredged material in an upland confined disposal facility (CDF) at Mole Pier, Naval Station; and 4) discharge CDF effluent into San Diego Bay, San Diego County, California.

Under the provisions of 33 Code of Federal Regulations 325.7(b), your permit is modified as follows: You are hereby authorized to transport and dispose of 85,500 cy of the dredged material at LA-5

The terms and conditions of Permit No. 972014600-MAT, except as changed herein, remain in full force and effect.

Please note that a copy of this letter is being forwarded to those agencies on the enclosed list.

Sincerely,

Richard J. Schubel
Chief, Regulatory Branch

Enclosure

Penafuerte, Grace S

From: Dat Quach [quacd@rb9.swrcb.ca.gov]
Sent: Thursday, February 17, 2000 9:45 AM
To: PenafuerteGS@EFDSW.NAVFAC.NAVY.MIL
Subject: Re: CRWQCB Concurrence of Pier 3 Dredging and Disposal Project

Yes, this is to confirm that the approval letter from the Water Board J.E. McAmis (prime contractor for this project) dated May 15, 1998 is still effective.

>>> "Penafuerte, Grace S" <PenafuerteGS@EFDSW.NAVFAC.NAVY.MIL> 02/16/00 10:25AM >>>
This email is to confirm that CRWQCB approval of Pier 3 dredged material disposal at Lakeside (originally received in 1998) is still applicable and relevant, as we discussed on the phone this morning.

The project received Water Board approval in a letter to J.E. McAmis (prime contractor for this project) dated May 15, 1998, based on an original upland disposal estimate of 126,000 CY of dredged material. The project now proposes disposal of approximately 99,000 CY of dredged material at Lakeside. Sediment testing has indicated suitability of a greater portion of the dredged material for ocean disposal.

Attached for your information is the Pre-Final Addendum to the Environmental Assessment for Pier 3 Dredging for Ocean/Upland Disposal.

If you have any questions, please feel free to contact me.

Sincerely,
Grace Peñafuerte

<<FINALad2.doc>>

Grace S. Peñafuerte
Environmental/Facilities Planner
South Bay Area Focus Team
Southwest Division

TEL (619) 556-7773
FAX (619) 556-8929
PenafuerteGS@efdsw.navfac.navy.mil

CalEPA

San Diego Regional Water Quality Control Board

771 Clairemont Mesa Blvd., Suite A
San Diego, CA 92124
(619) 467-2952
FAX (619) 571-6972

May 15, 1998

Post-it® Fax Note 7671	Date 5/15/98	# of pages ▶ 1
To Kim T	From Dat Q	
Co./Dept. J. E McAmis	Co. RWQCB	
Phone # (530) 891-5061	Phone # (619) 467-2978	
Fax # (530) 891-0904	Fax #	

John E. McAmis, President
J.E. McAmis, Inc.
3125 Southgate Lane
Chico, CA 95928

Dear Mr. McAmis:

DISPOSAL OF DREDGED MATERIALS FROM PIER 3

By letter dated May 6, 1998, you requested the authorization from Regional Board for disposal at the Lakeside Land Company facility approximately 126,000 cubic yards of sediment being dredged from Pier 3, Naval Station in San Diego.

The disposal of material at the Lakeside Land Company facility is regulated by the Regional Board's Order No. 92-14, *Waste Discharge Requirements for Lakeside Land Company, San Diego County*. This Order limits Lakeside Land Company to accepting only inert waste for disposal at its facility. In adopting Order No. 97-62, *Waste Discharge Requirements for the US Navy, Project P-338S, Pier 3 Dredging, San Diego County*, the Regional Board classified the Pier 3 sediment as inert waste.

Consequently, we have no objection to your proposal to dispose Pier 3 sediment at the Lakeside Land Company facility.

If you have any questions, please call Mr. Dat Quach at (619) 467-2978.

Respectfully,

Robert Morris

ROBERT W. MORRIS
Senior Water Resource Control Engineer

05-0843.02

Our mission is to preserve and enhance the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations.

(1)

STATE OF CALIFORNIA -- THE RESOURCES AGENCY
GRAY DAVIS, Gove
CALIFORNIA COASTAL COMMISSION
45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200

March 3, 2000

Ann Rosenberry
Department of the Navy, Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5190

RE: **ND-23-00** Negative Determination, U.S. Navy, Dredging Modifications, Pier 3, Naval Station San Diego

Dear Ms. Rosenberry:

The Coastal Commission staff has received the above-referenced negative determination for modifications to a previously-concurred-with consistency determination for maintenance dredging at Pier 3, located on the east side of San Diego Bay at the Naval Station San Diego. In 1994 the Commission concurred with this project (CD-51-94); at that time the Navy proposed disposal at LA-5 of 172,000 cu. yds. of clean (i.e., suitable for ocean disposal) material. On July 1, 1997, the Commission staff concurred with project modifications (ND-66-77); the modified project consisted of disposal of a total of 144,000 cu. yds. of material, with 92,000 cu. yds. going to an upland site, and 52,000 cu. yds. going to LA-5. The project has recently been further revised; the current proposal is for a total of 184,500 cu yds. material, with 85,500 cu. yds. going to LA-5 and 99,000 cu. yds going to an upland site outside the coastal zone. EPA has reviewed the Navy's most recent test data and agrees the 85,500 cu. yds. of material proposed for LA-5 disposal is suitable for open ocean disposal.

The current project also includes a Navy commitment for restoration of the Naval Outlying Landing Field (NOLF) site in Imperial Beach, an upland site which received previous disposal of some material, prior to questions raised by residents of Imperial Beach, the San Diego RWQCB, and the nearby (and downstream) Tijuana Slough National Wildlife Refuge. In light of the concerns raised the Navy ceased disposal at that site and has removed the material and agreed to restore the site to its pre-disposal condition. Upland disposal will now occur at the Lakeside Caster JV Reclamation Area (Lakeside Land Company), which is outside the coastal zone and a RWQCB-approved site.

Under the federal consistency regulations a negative determination can be submitted for an activity "which is the same as or similar to activities for which consistency determinations have been prepared in the past." The Commission previously concurred with dredging at Pier 3, with ocean disposal of the clean sediments at LA-5, and upland disposal of unsuitable material in a manner similar to that proposed here. Therefore, we **agree** with the Navy that this

modified dredging project does not raise any new issues with respect to coastal zone effects on marine resources or water quality not previously considered by the Commission. We therefore **concur** with your negative determination made pursuant to Section 15 CFR 930.35(d) of the NOAA implementing regulations. Please contact Mark Delaplaine at (415) 904-5289 if you have any questions.

Sincerely,

Mark Delaplaine

(for) PETER M. DOUGLAS
Executive Director

cc: San Diego Area Office
Governors Washington D.C. Office
EPA (Stephen John)
Army Corps of Engineers (David Zoutendyk)

Appendix B

Sampling and Analysis Plan for Ocean Disposal of Stockpiled Dredged Material from the Pier 3 Dredging Project, Naval Station, San Diego

DEPARTMENT OF THE NAVY
SOUTH BAY AREA FOCUS TEAM
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
2585 CALLAGAN HWY, BLDG 99
SAN DIEGO, CALIFORNIA 92136-5198

11000
Ser 5SPR.PM/303
12 Aug 99

From: Commander, Southwest Division, Naval Facilities Engineering Command
To: District Engineer, U.S. Army Corps of Engineers, San Diego

Subj: SAMPLING AND ANALYSIS PLAN, PIER 3 DREDGING PROJECT, NAVAL STATION, SAN DIEGO (97-20146-DZ)

Encl: (1) Vicinity Map
(2) Table
(3) Site Plan
(4) EPA Region 9 General Recommendations for Sediment Testing of Dredged Material Proposed for Ocean Dumping, December 1991.

1. The purpose of this letter is to submit a sampling and analysis plan for ocean disposal (LA-5) of stockpiled dredged material from the Pier 3 dredging project, Naval Station, San Diego. If approved for ocean disposal, the Navy would request a modification to Department of the Army permit (97-20146-DZ) for the project.

2. The stockpiled material consists of Baypoint Formation material dredged from the south side of Pier 3 and stockpiled in March/April 1999 under Department of the Army permit number 97-20146-DZ. The Baypoint Formation material is relatively dense with very low water content. The Baypoint Formation was deposited over 8,000 years ago; therefore, the material was removed from pollution sources at the time of deposition. The stockpiles are contained by low berms of clean material. In addition, they are underlain and overlain with 10-mil thick impervious sheeting.

3. Under the original permit, Baypoint Formation material was determined to be suitable for ocean disposal, however, the permit required a minimum of a 0.5 foot buffer between the sediment to be disposed at LA-5 and material to be disposed upland. This project dredged the upper unconsolidated bay mud using the environmental cable arm bucket dredge and placed it in the upland CDF and a disposal site in accordance with San Diego Regional Water Quality Control Board Resolution 83-21. The Baypoint Formation, including most of the buffer zone material, was dredged using a heavy clamshell dredge and placed in temporary stockpiles. It is likely that very small amounts of unconsolidated bay mud were likely left behind. Enclosure (1) shows the locations of the stockpiles. Enclosure (2) provides the height, area and volume at each stockpile.

Subj: SAMPLING AND ANALYSIS PLAN, PIER 3 DREDGING PROJECT, NAVAL STATION, SAN DIEGO (97-20146-DZ)

4. We propose to sample each of the three stockpiles as one site. Three core samples per site would be taken at the recycle yard and Public Works Center (PWC) yard, and four samples would be taken at the boat yard as shown in enclosure (3) using a hand auger or similar sampler. The samples would penetrate the entire depth of the stockpile. A qualified scientist will examine each core and describe the texture, odor, color, length, approximate grain size, and any peculiarities of the sediment. In addition, each core will be photographed.

5. Due to the hardness of the material, it will be difficult to combine and thoroughly homogenize the entire length of the three cores into a single composite sample. Therefore, we propose taking three discrete sub-samples from the top, middle and bottom of the three cores and compositing them for each site. If distinct strata are observed, these will be sampled and tested separately. Homogenizing the sub-samples to a uniform consistency will be performed in the laboratory using a stainless steel mixing apparatus. The sediment samples will be placed into certified clean glass jars with Teflon-lined lids.

6. The evaluation will include physical characterization and sediment chemistry testing outlined in enclosure (4). Physical and chemical analysis of sediment will be accomplished in accordance with "Green Book" guidance. A Tier II water column effects evaluation will also be performed.

7. The stockpiled dredged material is available for your inspection at any time during the processing of this permit modification.

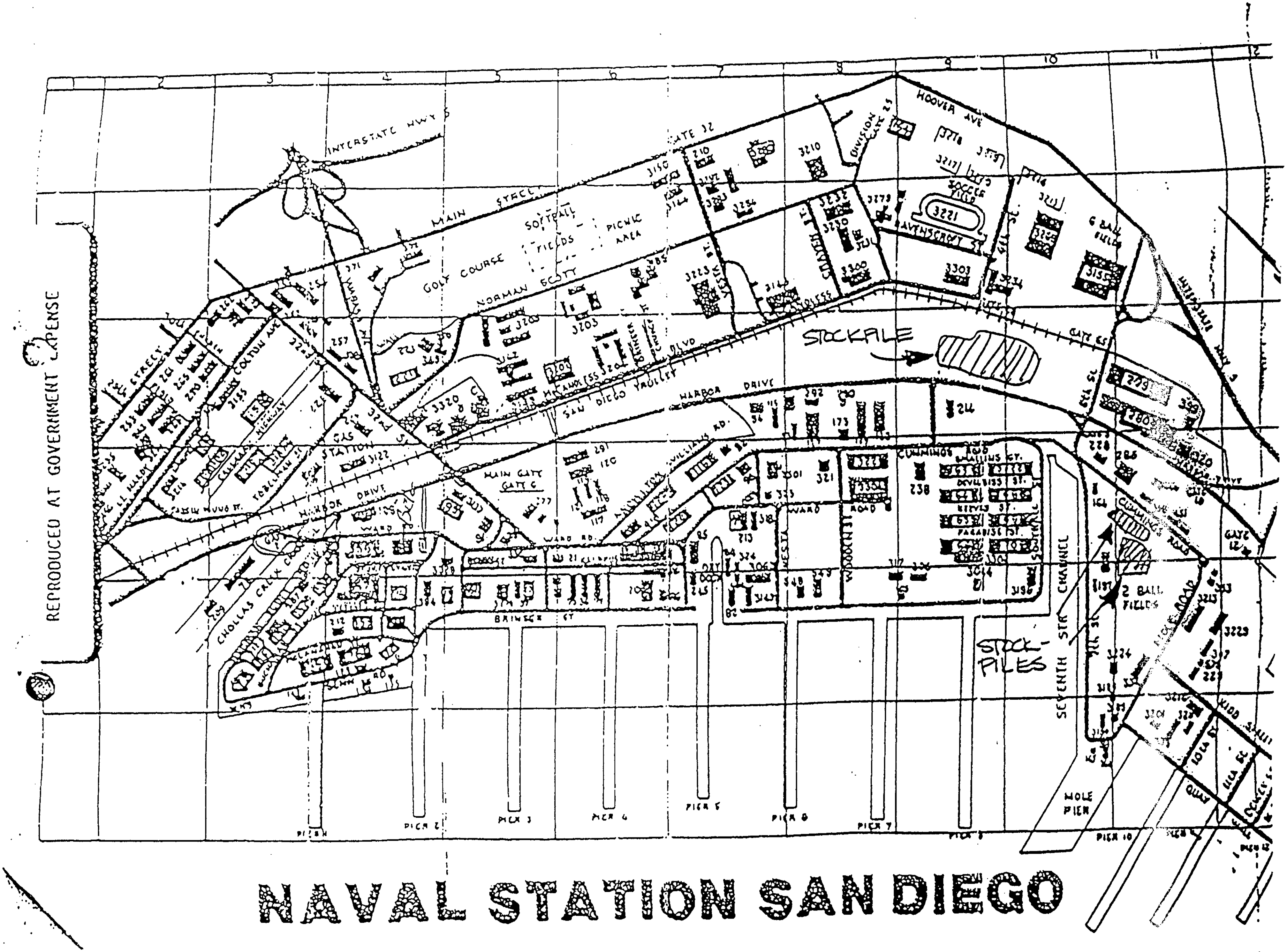
8. We request approval of the Sampling and Analysis Plan described in this letter. If you have any questions, please contact the undersigned, Code 5SPR.PM at (619) 556-8706 or via the Internet (mccaypj@efdsw.navfac.navy.mil).

PATRICK McCAY
By direction

Subj: SAMPLING AND ANALYSIS PLAN, PIER 3 DREDGING PROJECT, NAVAL STATION, SAN DIEGO (97-20146-DZ)

Copy to:
Steven John
U.S. EPA, Region IX
C/O U.S. Army Corps of Engineers
(CESPL-PD-R)
P.O Box 532711
Los Angeles, CA 90053-2325

John Robertus
California Regional Water
Quality Control Board
9771 Clairemont Mesa Blvd., Suite A
San Diego, CA 92124-1331

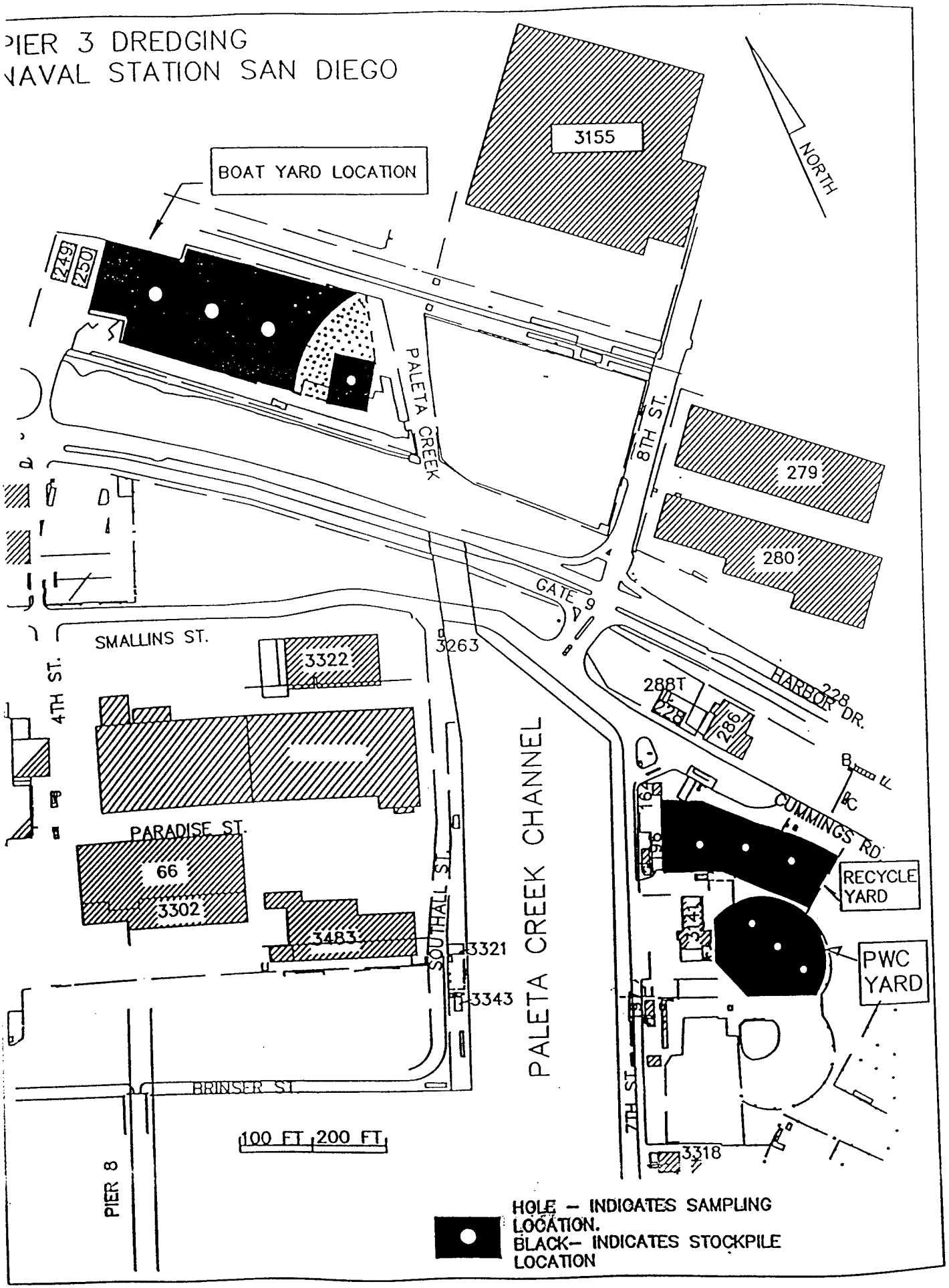


NAVAL STATION SAN DIEGO

Table

Site	Date of Stockpiling	Height (ft)	Area (ft^2)	Volume (yd^3)
Boat Yard	Mar 24-Apr 10, 1999	12	115,000	48,425
Recycle Yard	Mar 12-16, 1999	10	30,000	10,550
PWC Yard	Mar 16-24, 1999	12	60,000	26,050
Total			205,000	85,025

End (2)


PIER 3 DREDGING
NAVAL STATION SAN DIEGO
BOAT YARD LOCATION
3155
NORTH
249
250
PALETA CREEK
8TH ST.
279
280
GATE 9
SMALLINS ST.
3322
3263
4TH ST.
288T
228
286
HARBOR DR.
228
PARADISE ST.
66
3302
3483
SOUTHALL ST.
3321
3343
PALETA CREEK CHANNEL
CUMMINGS RD.
164
196
RECYCLE YARD
3141
PWC YARD
BRINSER ST.
7TH ST.
3318
100 FT 200 FT
PIER 8
HOLE – INDICATES SAMPLING LOCATION.
BLACK– INDICATES STOCKPILE LOCATION

REGION 9 GENERAL RECOMMENDATIONS FOR SEDIMENT TESTING OF DREDGED MATERIAL PROPOSED FOR OCEAN DUMPING

Effective Date: December 1991

The proposed sampling plan for any project must be reviewed and approved by EPA Region IX and the appropriate District office of the U.S. Army Corps of Engineers before any samples are taken.

Sediment should be collected from the dredging site and a reference site, not the disposal site. EPA recommends that vibracores be taken at an appropriate number of stations at the dredging site to project depth plus a 2-foot overdredge depth. The number of sampling areas will vary depending on the extent of proposed dredging. Coordination with EPA Region IX and the Corps' District office is necessary to determine the appropriate number of sampling areas. Core samples from 3 to 5 locations within a sampling area can be composited into one station sample for comparison with the sample(s) collected at the reference site. Several 0.1 m^2 van Veen grabs should be taken at the reference site and composited to produce one sample. Other suitable sampling devices may be used if the reference sediments are coarse. Alternate grab samplers must be approved by EPA and the Corps.

a. The location of each core sampling site should be based directly on the amount and extent of dredging proposed. In general, the core sampling sites should be located within each sampling area where the greatest depth of sediment is planned for excavation or in areas of known or suspected contamination. Predredging condition survey charts for the dredging project are required to locate core sampling stations. Accurate navigational equipment should be used to locate core sampling sites.

b. Detailed sampling plans should be formulated early to ensure that enough sediment is obtained to perform all sediment physical, chemical, bioassay and bioaccumulation tests. If a major sedimentological boundary is found upon examining the cores, then the samples should be split into upper and lower sections and analyzed separately. If deep dredging is proposed, EPA Region IX and the Corps may require the applicant to split the cores.

c. The sampling log information should include data entries for odor, physical descriptions of the sediment core and sampling problems.

All data obtained from dredging site samples should be compared statistically to the reference site. References for the comparison procedures include:

a. EPA's Ocean Dumping Regulations at 40 CFR Parts 220, 225, 227 and 228;

b. The 1991 EPA/Corps Evaluation of Dredged Material Proposed for Ocean Disposal - Testing Manual, also known as the 1991 Green Book (EPA 503/8-91/001);

c. The Draft Bioassay Manuals for the Corps' Pacific Ocean Division or the Los Angeles District; and/or

d. Testing agreements reached between Region IX and the San Francisco District.

A testing report, including the sediment physical chemical, bioassay and bioaccumulation test results, should be reported in the following format and, at a minimum, should include the following information:

a. INTRODUCTION - Including project description (location, project depth, overdredge depth and disposal quantities), and previous dredging history (type of work such as maintenance or new work, date of last dredging operation, quantity of sediment dredged and disposal site). A location map and project plan drawing should be included. Known or suspected contamination of the site, including chemical or waste spills and other discharges that may cause contamination of the proposed dredging site (i.e., NPDES discharges, RCRA sites, CERCLA sites, landfills, or nonpoint source discharges).

b. LOCATION OF SAMPLING AREAS - Including sampling areas at the dredging site, the control site and the reference site showing the exact position of the sediment sampling locations. An appropriate system should be selected to accurately and precisely locate all sediment sampling sites for each station. The type of positioning equipment to be used should be specified.

c. MATERIALS AND METHODS - Including field sampling procedures and laboratory protocols for sediment physical, chemical, bioassay and bioaccumulation tests. The laboratory protocols should include EPA method numbers, method detection limits, statistical procedures, and a discussion of the sample clean-up and QA/QC procedures used for sediment and tissue analyses.

d. FINAL RESULTS - Including summaries and raw data sheets.

e. DISCUSSION - Including comparisons and contrasts with historical data from the proposed dredging site and statistical comparisons with the ocean reference site.

f. APPLICANT'S ANALYSIS OF DATA - Including data analysis and suitability of the material for disposal as determined by the comparison of the material to the reference site.

g. REFERENCES - Including all references used in the field sampling program, laboratory and statistical data analyses, as well as historical information used in site comparisons.

h. DETAILED QA/QC INFORMATION

PERTINENT LETTERS INDICATING SCOPING COMMENTS OR PROJECT COORDINATION - Including information required by the appropriate Federal and State offices with regulatory responsibility for ocean dumping of dredged material (the California Regional Water Quality Control Boards, the California Coastal Commission, the California State Lands Commission, or the Hawaii Department of Health).

Control sediment must be used for all bioassay and bioaccumulation tests. Control sediments are distinguished from the reference sediments because the control sediments are collected from the site where the test species were collected. The control tests will be used to determine the health of the test species during the course of bioassay and bioaccumulation tests. Sediment physical chemical, bioassay and bioaccumulation tests should only be compared between the dredging site and the reference site, not the control site.

The sediment physical and chemical tests should measure the following parameters at the method detection limits shown in parentheses. All data should be reported in dry weight unless otherwise specified. If the site has been contaminated or is suspected of being contaminated as described in the Introduction section of the report, then the suspected contaminants should be added to the list of chemicals provided below.

a. PHYSICAL CHARACTERIZATION

1) Grain Size Analysis (0.1% phi and mm)
2) Total Solids or Water Content (0.1% solids)

b. SEDIMENT CHEMISTRY TESTING

1) Metals
   a) Cadmium (0.1 mg/kg)
   b) Chromium (0.1 mg/kg)
   c) Copper (0.1 mg/kg)
   d) Lead (0.1 mg/kg)
   e) Mercury (0.02 mg/kg)
   f) Nickel (0.1 mg/kg)
   g) Selenium (0.1 mg/kg) (California only)
   h). Silver (0.1 mg/kg)
   i) Zinc (2.0 mg/kg)

2) Nonmetals
   a) Arsenic (0.1 mg/kg)
   b) Total and Water Soluble Sulfides (0.1 mg/kg)

Pesticides

a) Aldrin (0.5-2.0 ug/kg)
b) Chlordane and Deriv. (5.0-25.0 ug/kg)
c) Dieldrin (0.5-2.0 ug/kg)
d) DDT and Derivatives (0.5-2.0 ug/kg)
e) Endrin and Derivatives (0.5-2.0 ug/kg)
f) Endosulfan I (2.0-10.0 ug/kg)
g) Endosulfan II (0.5-2.0 ug/kg)
h) Endosulfan Sulfate (10.0-25.0 ug/kg)
i) Hexachlorocyclohexane (HCH) and Derivatives (0.5-2.0 ug/kg)
j) Toxaphene (30.0 ug/kg)

Organics

a) Oil and Grease [20.0 ug/kg (wet weight)]
b) Organotin Compounds: Mono-, Di-, and Tributyltin (1.0 ug/kg) reported individually
c) Total Recoverable Petroleum Hydrocarbons (20.0 ug/kg)
d) Total Phenols (20.0-100.0 ug/kg)
e) Polychlorinated Biphenyls
   Total PCBs (20.0 ug/kg)
   Individual Aroclors 1242, 1254, 1260 (20.0 ug/kg)
f) Polynuclear Aromatic Hydrocarbons
   For each PAH (20.0 ug/kg)
   Total PAHs
   Acenaphthene
   Acenaphthylene
   Anthracene
   Benzo(a)anthracene
   Benzo(a,e)pyrene
   Benzo(g,h,i)perylene
   Benzo(k)fluoranthene
   Benzo(b)fluoranthene
   Chrysene
   Dibenzo(a,h)anthracene
   Fluoranthene
   Fluorene
   Indeno(1,2,3,-c,d)pyrene
   Naphthalene
   Phenanthrene
   Pyrene
g) Total Phthalates (10.0 ug/kg)
h) Total Organic Carbon (0.1%)

Bioassay tests must be conducted on all composited dredging site samples, reference site samples and control samples in accordance with protocols defined in the 1991 EPA/Corps Green Book. At this time, EPA recommends that the following test species be used:

a. Suspended Particulate Phase Bioassay Tests

1) Pacific Ocean Division
   a) Bivalve larvae,
   b) Penaeus vannamei, and
   c) Juvenile fish species

2) South Pacific Division
   a) Mytilus sp. or Crassostrea sp. larvae survival and development test,
   b) Holmsomysis costata, and
   c) Citharichthys stigmaeus

b. Solid Phase Bioassay Tests

1) Pacific Ocean Division
   a) Neanthes sp.,
   b) Penaeus vannamei and
   c) A 10-day amphipod bioassay test using an appropriate test species such as Rhepoxynius abronius, Ampelisca abdita or another species listed in the ASTM 1990 10-day amphipod bioassay protocol.

2) South Pacific Division
   a) Neanthes or Nephtys sp.,
   b) Holmsomysis costata,
   c) A 10-day amphipod bioassay test using an appropriate test species such as Rhepoxynius abronius, Ampelisca abdita or another species listed in the ASTM 1990 10-day amphipod bioassay protocol.

Bioaccumulation tests should be conducted. The following chemicals should be analyzed at the method detection limits specified in parentheses from tissue samples of Tapes japonica and Neanthes sp. (Pacific Ocean Division), or Macoma nasuta and Neanthes sp. or Nephtys sp. (South Pacific Division). These species shall be used in a 28-day bioaccumulation test to evaluate heavy metal and organic chemical concentrations in tissues, or a 10-day bioaccumulation test if heavy metals are the only concern.

a. Metals
   1) Cadmium (0.1 mg/kg)
   2) Chromium (0.02 mg/kg)
   3) Copper (0.1 mg/kg)
   4) Lead (0.1 mg/kg)

5) Mercury (0.02 mg/kg)
6) Nickel (0.02 mg/kg)
7) Selenium (0.1 mg/kg) (California only)
8) Silver (0.1 mg/kg)
9) Zinc (1.0 mg/kg)

b. Nonmetals
1) Arsenic (0.25 mg/kg)

c. Pesticides
1) Aldrin (0.5-2.0 ug/kg)
2) Chlordane and Deriv. (0.5.0-25.0 ug/kg)
3) Dieldrin (0.5-2.0 ug/kg)
4) DDT and Derivatives (0.5-2.0 ug/kg)
5) Endrin and Deriv. (0.5-2.0 ug/kg)
6) Endosulfan I (2.0-10.0 ug/kg)
7) Endosulfan II (0.5-2.0 ug/kg)
8) Endosulfan Sulfate (10.0-25.0 ug/kg)
9) HCH and Deriv. (0.5-2.0 ug/kg)
10) Toxaphene (30.0 ug/kg)

d. Organics
1) Polychlorinated Biphenyls (PCBs):
a) Total (20.0 ug/kg)
b) Individual Aroclors 1242, 1254, and 1260 (20.0 ug/kg)
2) Polynuclear Aromatic Hydrocarbons (PAHs), for each PAH below (20.0 ug/kg):
a) Total PAHs
b) Acenaphthene
c) Acenaphthylene
d) Anthracene
e) Benzo(a)anthracene
f) Benzo(a,e)pyrene
g) Benzo(g,h,i)perylene
h) Benzo(k)fluoranthene
i) Benzo(b)fluoranthene
j) Chrysene
k) Dibenzo(a,h)anthracene
l) Fluoranthene
m) Fluorene
n) Indeno(1,2,3,-c,d)pyrene
o) Naphthalene
p) Phenanthrene
q) Pyrene

A full description of any additional tests required by the State (i.e., water quality, elutriate chemistry tests or other required tests) should be included in the proposed testing plan for the project.

Strict adherence to the 1991 EPA/Corps Green Book must be maintained. Any proposed variation from the required procedures in the 1991 Green Book should be communicated to and approved by EPA Region IX and the Corps of Engineers District office before the protocols are changed.

Depending on the proposed project, EPA Region IX may request that the applicant provide a copy of a predredging survey for all areas proposed for dredging. This survey should be a copy of the fathometer soundings taken at the proposed dredging site.

a. The areas of proposed dredging should be clearly marked, including all side sloping or relief cuts, U.S. Pierhead Lines, and other important boundaries.

b. The ratio of the side slope or relief cut should be defined (i.e., 1:1, 1:2, 1:3, etc.).

All predredge soundings should be corrected for tides and checked for accuracy. Control points at the dredging site should be plotted. The type and accuracy of sounding and navigation instruments used should be reported.

d. A detailed survey of the predredge conditions should be prepared including the following information:

1) Areas above project depth (grade) that must be dredged should be shaded green.

2) Areas at grade or between grade and overdredge depth should be shaded yellow.

3) Areas below overdredge depth should be shaded blue.

4) All soundings should be clearly printed on the chart even if the area is shaded. The exact point where the sounding was taken should be defined.

c. An acceptable coordinate system should be defined and used in the predredge survey, such as latitude and longitude coordinates.

FINAL REPORT

SEDIMENT CHARACTERIZATION FOR THE UPLAND DISPOSAL OF PIER 3 SEDIMENT

October, 1996

SUBMITTED TO:
Regional Water Quality Control Board
San Diego Region
9771 Clairemont Mesa Boulevard, Suite A
San Diego, California 92124-1331

SUBMITTED BY:
U.S. Department of the Navy
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5190

Excerpt: Executive Summary

1 of 2

EXECUTIVE SUMMARY

The Department of the Navy is proposing to dredge the approach and berthing areas at Pier 3 at Naval Station, San Diego (NAVSTA), San Diego Bay, California. Dredging of approximately 160,000 cubic yards (cy) of material is necessary to allow safe berthing of new deep-draft power intensive (DDPI) vessels which will be relocated to NAVSTA. This action is the result of the directives of the Base Realignment and Closure Commission (BRAC) which has directed DDPI currently homeported elsewhere to be realigned to NAVSTA. Because this is a BRAC action, there is a high level of urgency for completion of this project. DDPI's are currently scheduled to be relocated to Pier 3 in 1997.

The results presented in this report are for the sole purpose of obtaining the permits necessary to dredge material adjacent to Pier 3, and place it in an upland confined disposal facility (CDF) to be constructed at NAVSTA. The sediment tested as part of this project has previously undergone bioassay/bioaccumulation analyses for potential ocean disposal under Marine Protection Research And Sanctuaries Act (MPRSA) Section 103 requirements. Based on solid phase toxicity in the bioassay analyses, this material was determined, by the U.S. Army Corps of Engineers (ACOE), to be unsuitable for ocean disposal. Consequently, upland disposal of the dredged material is now being proposed.

This report summarizes the results of a definitive sediment chemistry characterization study conducted on the sediment adjacent to Pier 3 to obtain San Diego Regional Water Quality Control Board (RWQCB), California Department of Health Services (DOHS), and ACOE permits necessary for upland disposal. The sediment was tested for compliance with California Title 22 and RWQCB Resolution 83-21 criteria for hazardous or designated wastes.

Results of the chemistry analyses indicate that none of the regulatory criteria (STLC, TTLC, or Res. 83-21) for hazardous wastes was exceeded. Although the sediment is non-hazardous, it has levels of several contaminants (e.g., petroleum hydrocarbons, PCBs) which classify the sediment as a designated waste. Removal of the upper unconsolidated sediment layer from San Diego Bay represents an environmental benefit since it is currently in contact with bay water and biota. This report provides information to support the

permitting of the upper, unconsolidated layers of the proposed dredged material for placement within a land-based CDF to be constructed at NAVSTA.

In addition to chemical analysis of sediment adjacent to Pier 3, sub-bottom profiling of the proposed dredge footprint was conducted. During vibracore collection, it was noted that a hard sub-bottom layer was encountered throughout the site. This hard layer, which is considered to be native and uncontaminated, should not have to be disposed of with the unconsolidated contaminated surficial sediments. To quantify the exact location of this layer compared to the surface sediment, sub-bottom profiling was conducted on the entire site.

The results of the profiling study indicate that approximately 62,000 cy of the 160,000 cy in the dredge footprint are unconsolidated surficial sediments. The remaining sediment is composed of hard substratum which is considered to be native sediment. The Navy is proposing to pursue a Tier 1 determination from the ACOE to dispose of the hard substratum material at the ocean disposal site referred to as LA-5 based on the fact that it is native sediment.

Appendix C

Record of Non-applicability
And
Air Emission Tables

United States Navy

Commanding Officer, Naval Station, San Diego

Record of Non-Applicability
P-338s, Pier 3 Dredging

Naval Station San Diego

Pursuant to Section 176 (c) of the Clean Air Act, as amended by the 1990 amendments; the General Conformity Rule at 40 CFR Parts 51 and 93; and the Draft Chief of Naval Operations Interim Guidance on Compliance with the Clean Air Act Conformity Rule, the Department of Navy (DON) calculated the total air emissions associated with the proposed dredging and operation of Pier 3 at Naval Station, San Diego. The calculations presented in the Addendum to the Environmental Assessment for P-338s, Pier 3 Dredging, Naval Station San Diego (June 2000) establish that the air emissions associated with the proposed action are below de minimis levels and are not "regionally" significant because they do not exceed 10% of the San Diego Air Basin's total emissions inventory for any pollutant. Consequently, the proposed action is exempt the conformity determination requirements of the Environmental Protection Agency's conformity rule.

To the best of my knowledge, the information contained in the DON's applicability analysis is correct and accurate and I concur in the finding that air emissions associated with the proposed action are below de minimis levels, are not regionally significant, and therefore do not require further conformity analysis or determination.

NAVSTA San Diego Approval — 6/14/2000 Date

L.R. HERING
Captain, U.S. Navy
Commanding Officer

TABLE 1 ESTIMATED ANNUAL AIR QUALITY EMISSIONS

Ocean Disposal at LA-5 (Remainder Upland at Lakeside)

Activity/Equip Type	ROG	CO	TONS NOx	SOx	PM_{10}
Dredging					
Tug Boat #1	0.077	0.240	1.763	0.316	0.036
Clamshell Dredge (3 eng)	0.510	1.440	6.683	0.439	0.451
Water Pump	0.004	0.011	0.052	0.003	0.004
Worker commute	0.029	0.214	0.026	0.002	0.006
Barge to Staging					
Tug Boat #2	0.355	1.113	8.179	1.464	0.168
Dump Truck - onsite	0.104	0.640	1.481	0.162	0.088
Excavator #1	0.156	1.714	3.739	0.312	0.234
Staging to Stockpile					
Backhoe	0.303	0.823	4.316	0.272	0.263
Dump Truck - onsite	0.065	0.401	0.930	0.101	0.055
Excavator #2	0.156	1.714	3.739	0.312	0.234
Water Truck	0.006	0.034	0.079	0.009	0.005
Street Sweeper #1	0.069	1.515	0.393	0.002	0.000
Street Sweeper #2	0.105	2.301	0.597	0.003	0.001
Float Tractor	0.010	0.027	0.139	0.009	0.008
Lightstand	0.032	0.090	0.418	0.027	0.028
Load for Transport					
Loader	0.258	0.613	1.993	0.194	0.174
Dump Truck - onsite	0.384	2.359	5.465	0.596	0.325
Worker commute	0.024	0.176	0.022	0.001	0.005
Fugitive dust					1.204
Total onsite emissions	**2.646**	**15.423**	**40.014**	**4.222**	**3.289**
Sediment Transfer					
NAVSTA to Lakeside - yr 2	0.170	0.786	1.030	0.041	0.150
NOLF to Lakeside	0.085	0.393	0.515	0.020	0.075
NAVSTA to NOLF	0.022	0.101	0.132	0.005	0.019
NAVSTA to Lakeside - yr 1	0.612	2.831	3.709	0.146	0.538
NAVSTA to LA-5	0.109	0.342	2.517	0.450	0.052
Placement of Material at Disposal Area					
Bulldozer (D6H LPG)	0.162	0.461	1.674	0.183	0.143
Lightstands	0.000	0.000	0.000	0.000	0.000
Loaders (Cat 980C)	0.334	0.795	2.588	0.251	0.226
Excavator (Hitachi 310)	0.075	0.832	1.815	0.151	0.113
Sand Shaker	0.059	0.166	0.769	0.051	3.105
Grand Total (Onsite, Transfer, & Placement)	**4.275**	**22.131**	**54.763**	**5.521**	**7.710**
Year 1 - Project Total	3.324	18.123	44.208	4.356	5.197
Year 2 - Project Total	0.951	4.008	10.555	1.165	2.513
SIG CRITERIA	**50.000**	**100.000**	**50.000**	**100.000**	**100.000**

Emission Source Data

Activity/ Equipment Type	Pwr Rating (hp)	Load Factor	# Active	Hourly hp-hours	Fuel Use (gal/hr)	Hours Per Day	Work Days	Fuel Use (gal)
Dredging								
Tug Boat #1	350	0.5	1	175	18.50	5.00	91	8,417.5
Clamshell Dredge (3 eng)	445	0.5	1	222.5	17.36	14.00	91	22,116.6
Water Pump	75	0.5	1	37.5	1.90	1.00	91	172.9
Worker commute [1]	NA	NA	15	NA	20.00	300.00	91	27,300.0
Barge to Stockpile								
Tug Boat #2	1050	0.60	1	630	39.00	11.00	91	39,039.0
Dump Truck - onsite[2]	350	0.25	5	437.5	22.32	5.10	91	10,356.4
Excavator #1	428	0.50	1	214	12.00	16.00	91	17,472.0
Staging to Stockpiles								
Backhoe	225	0.50	1	112.5	12.00	16.00	91	17,472.0
Dump Truck - onsite	300	0.25	1	75	4.46	16.00	91	6,498.1
Excavator #2	428	0.50	1	214	12.00	16.00	91	17,472.0
Water Truck	240	0.33	1	79.2	6.10	1.00	91	555.1
Street Sweeper #1	175	0.50	1	87.5	9.80	1.00	79	774.2
Street Sweeper #2	175	0.50	1	87.5	9.80	10.00	12	1,176.0
Float Tractor	100	0.50	1	50	6.20	1.00	91	564.2
Lightstand	30	0.50	2	30	3.80	4.00	91	1,383.2
Load for Transport								
Loader	220	0.50	1	110	14.50	8.00	107	12,412.0
Dump Truck - onsite	350	0.25	8	700	35.70	10.00	107	38,203.3
Worker commute [1]	NA	NA	7	NA	30.00	210.00	107	22,470.0
Placement of Material								
Bulldozer (D6H LPG)	170	0.50	2	170	13.00	8.00	113	11,752.0
Lightstands	30	0.50	0	0	0.00	8.00	1	0.0
Loaders (Cat 980C)	275	0.50	2	275	19.00	8.00	106	16,112.0
Excavator (Hitachi 310)	250	0.50	1	125	10.00	8.00	106	8,480.0
Sand Shaker	175	0.33	1	57.75	3.00	8.00	106	2,546.5
Transport to LA-5								
Tug Boat	1050	0.60	1	630	39.00	14.00	22	12,012.0

Note 1: For worker commute, fuel use is roundtrip mileage per employee per day, hr/day is total daily mileage, and Total Fuel usage is total project mileage

Note 2: Dump trucks on-site are corrected to assume 2 trucks for 10 hours for 79 days and then 5 trucks for 12 hours for 12 days.

	Fuel Type	Pounds/ 1000 Gallons of Fuel Consumed [1]					
		ROG	CO	NOx	SOx	PM10	Source
Bulldozer	D	27.60	78.50	284.90	31.10	24.30	2
Compactor	D	32.40	32.40	368.00	31.10	28.90	2
Dump Truck -transport	D	0.80	6.33	12.04	0.56	0.64	3
Grader	D	12.20	54.70	253.80	31.10	0.00	2
Loader	D	41.50	98.70	321.20	31.20	28.10	2
Stationary Engine >600hp	D	13.20	111.00	424.80	39.70	9.00	4
Stationary Engine <600hp	D	46.10	130.20	604.30	39.70	40.80	5
Tug Boats	D	18.20	57.00	419.00	75.00	8.60	6
Water truck	D	20.10	123.50	286.10	31.20	17.00	2
Dump Truck - onsite	D	20.10	123.50	286.10	31.20	17.00	2
Backhoe	D	34.70	94.20	494.00	31.10	30.10	7
Sweeper	G	178.96	3913.62	1014.79	5.31	1.18	10
Float Tractor	D	34.70	94.20	494.00	31.10	30.10	7
Excavator	D	17.80	196.17	428.00	35.67	26.75	8
Lt Duty passenger car	G	0.002065	0.013940	0.001640	0.000102	0.000463	9
Lt Duty passenger truck	G	0.002298	0.018217	0.002363	0.000137	0.000462	9
60% Car and 40% truck	G	0.002158	0.015650	0.001929	0.000116	0.000463	
HD Trucks	D	0.004856	0.022468	0.029434	0.001161	0.004272	9
Sand Shaker	D	46.10	130.20	604.30	39.70	2438.40	11

Notes:
(1) Emission factor for Dump Truck Transport in grams/mile
(2) AP-42 Table II-7.1 (EPA 1985)
(3) EMFAC7G (ARB 1997) Year 2001 emission factors based on an avg speed of 55 mph
(4) AP-42 Table 3.4-1, Vol. 1 (EPA 1995)
(5) AP-42 Table 3.3-1, Vol. 1 (EPA 1995)
(6) Lloyd's Register of Shipping, London 1990, 1993, and 1995, from Acurex Env. Corp, 1996.
(7) Table 3.2.7-1 AP-42 Jan84 (gov't owned version)
(8) 1993 CEQA Handbook via Lida at FW
(9) Burden7F as faxed by Ogden (factor is for pounds/mile)
(10) EPA Nonroad Engine and Vehicle Emission Study - Report (Nov 91) from SAIC
(11) Reference (5) above plus PM10 using factors from SAIC (8/30/99)

TABLE 1 - P-338s, Pier 3 Dredging, Truck Haul Assumptions

Ocean Disposal at LA-5 (Remainder Upland at Lakeside)

Work Day= 10 hrs

Trucktrips= 80

Assumes 80 truck round trips/day

	CY Total	CY/load	loads	RT mi	hrs/RT	Days	Indiv RT/Day	Total RT/day	Total mi/day	Project total mi
NAVSTA to LA-5	85,500	2000	42.75		7	21.375	2	2		
NAVSTA to Lakeside	20,000	12	1,667	42	1.30	20.8	7.7	80	3,360	70,000
Lakeside to Lakeside	0	12	0	0	1.50		0.0	0	0	0
NOLF to Lakeside	7,000	12	583	60	1.50	7.3	6.7	80	4,800	35,000
	112,500		**2,250**			**28.1**			**8,160**	**105,000**
NAVSTA to NOLF	4,500	12	375	24	0.5	2.0	20.0	190	4,560	9,000
NAVSTA to Lakeside	72,000	12	6,000	42	1	50.0	10.0	120	5,040	252,000
	76,500		**6,375**			**52.0**			**9,600**	**261,000**

TABLE 2 ESTIMATED ANNUAL AIR QUALITY EMISSIONS

Ocean Disposal at LA-5 (Remainder Upland at El Corazon)

			TONS		
Activity/Equip Type	ROG	CO	NOx	SOx	PM_{10}
Dredging					
Tug Boat #1	0.077	0.240	1.763	0.316	0.036
Clamshell Dredge (3 eng)	0.510	1.440	6.683	0.439	0.451
Water Pump	0.004	0.011	0.052	0.003	0.004
Worker commute	0.029	0.214	0.026	0.002	0.006
Barge to Staging					
Tug Boat #2	0.355	1.113	8.179	1.464	0.168
Dump Truck - onsite	0.104	0.640	1.481	0.162	0.088
Excavator #1	0.156	1.714	3.739	0.312	0.234
Staging to Stockpile					
Backhoe	0.303	0.823	4.316	0.272	0.263
Dump Truck - onsite	0.065	0.401	0.930	0.101	0.055
Excavator #2	0.156	1.714	3.739	0.312	0.234
Water Truck	0.006	0.034	0.079	0.009	0.005
Street Sweeper #1	0.069	1.515	0.393	0.002	0.000
Street Sweeper #2	0.105	2.301	0.597	0.003	0.001
Float Tractor	0.010	0.027	0.139	0.009	0.008
Lightstand	0.032	0.090	0.418	0.027	0.028
Load for Transport					
Loader	0.258	0.613	1.993	0.194	0.174
Dump Truck - onsite	0.384	2.359	5.465	0.596	0.325
Worker commute	0.024	0.176	0.022	0.001	0.005
Fugitive dust					1.204
Total onsite emissions	**2.646**	**15.423**	**40.014**	**4.222**	**3.289**
Sediment Transfer					
NAVSTA to El Corazon	0.308	1.423	1.864	0.074	0.271
Lakeside to El Corazon	0.000	0.000	0.000	0.000	0.000
NOLF to El Corazon	0.147	0.682	0.893	0.035	0.130
NAVSTA to NOLF	0.022	0.101	0.132	0.005	0.019
NAVSTA to Lakeside	0.612	2.831	3.709	0.146	0.538
NAVSTA to LA-5	0.109	0.342	2.517	0.450	0.052
Placement of Material at Disposal Area					
Bulldozer (D6H LPG)	0.162	0.461	1.674	0.183	0.143
Lightstands	0.000	0.000	0.000	0.000	0.000
Loaders (Cat 980C)	0.334	0.795	2.588	0.251	0.226
Excavator (Hitachi 310)	0.075	0.832	1.815	0.151	0.113
Sand Shaker	0.059	0.166	0.769	0.051	3.105
Grand Total (Onsite, Transfer, & Placement)	**4.475**	**23.056**	**55.975**	**5.569**	**7.886**
Year 1 - Project Total	3.324	18.123	44.208	4.356	5.197
Year 2 - Project Total	1.151	4.933	11.766	1.213	2.689
SIG CRITERIA	**50.000**	**100.000**	**50.000**	**100.000**	**100.000**

Emission Source Data

Activity/ Equipment Type	Pwr Rating (hp)	Load Factor	# Active	Hourly hp-hours	Fuel Use (gal/hr)	Hours Per Day	Work Days	Fuel Use (gal)
Dredging								
Tug Boat #1	350	0.5	1	175	18.50	5.00	91	8,417.5
Clamshell Dredge (3 eng)	445	0.5	1	222.5	17.36	14.00	91	22,116.6
Water Pump	75	0.5	1	37.5	1.90	1.00	91	172.9
Worker commute [1]	NA	NA	15	NA	20.00	300.00	91	27,300.0
Barge to Stockpile								
Tug Boat #2	1050	0.60	1	630	39.00	11.00	91	39,039.0
Dump Truck - onsite[2]	350	0.25	5	437.5	22.32	5.10	91	10,356.4
Excavator #1	428	0.50	1	214	12.00	16.00	91	17,472.0
Staging to CDF								
Backhoe	225	0.50	1	112.5	12.00	16.00	91	17,472.0
Dump Truck - onsite	300	0.25	1	75	4.46	16.00	91	6,498.1
Excavator #2	428	0.50	1	214	12.00	16.00	91	17,472.0
Water Truck	240	0.33	1	79.2	6.10	1.00	91	555.1
Street Sweeper #1	175	0.50	1	87.5	9.80	1.00	79	774.2
Street Sweeper #2	175	0.50	1	87.5	9.80	10.00	12	1,176.0
Float Tractor	100	0.50	1	50	6.20	1.00	91	564.2
Lightstand	30	0.50	2	30	3.80	4.00	91	1,383.2
Load for Transport								
Loader	220	0.50	1	110	14.50	8.00	107	12,412.0
Dump Truck - onsite	350	0.25	8	700	35.70	10.00	107	38,203.3
Worker commute [1]	NA	NA	7	NA	30.00	210.00	107	22,470.0
Placement of Material								
Bulldozer (D6H LPG)	170	0.50	2	170	13.00	8.00	113	11,752.0
Lightstands	30	0.50	0	0	0.00	8.00	1	0.0
Loaders (Cat 980C)	275	0.50	2	275	19.00	8.00	106	16,112.0
Excavator (Hitachi 310)	250	0.50	1	125	10.00	8.00	106	8,480.0
Sand Shaker	175	0.33	1	57.75	3.00	8.00	106	2,546.5
Transport to LA-5								
Tug Boat	1050	0.60	1	630	39.00	14.00	22	12,012.0

Note 1: For worker commute, fuel use is roundtrip mileage per employee per day, hr/day is total daily mileage, and Total Fuel usage is total project mileage

Note 2: Dump trucks on-site are corrected to assume 2 trucks for 10 hours for 79 days and then 5 trucks for 12 hours for 12 days.

	Fuel Type	Pounds/ 1000 Gallons of Fuel Consumed [1]					
		ROG	CO	NOx	SOx	PM10	Source
Bulldozer	D	27.60	78.50	284.90	31.10	24.30	2
Compactor	D	32.40	32.40	368.00	31.10	28.90	2
Dump Truck -transport	D	0.80	6.33	12.04	0.56	0.64	3
Grader	D	12.20	54.70	253.80	31.10	0.00	2
Loader	D	41.50	98.70	321.20	31.20	28.10	2
Stationary Engine >600hp	D	13.20	111.00	424.80	39.70	9.00	4
Stationary Engine <600hp	D	46.10	130.20	604.30	39.70	40.80	5
Tug Boats	D	18.20	57.00	419.00	75.00	8.60	6
Water truck	D	20.10	123.50	286.10	31.20	17.00	2
Dump Truck - onsite	D	20.10	123.50	286.10	31.20	17.00	2
Backhoe	D	34.70	94.20	494.00	31.10	30.10	7
Sweeper	G	178.96	3913.62	1014.79	5.31	1.18	10
Float Tractor	D	34.70	94.20	494.00	31.10	30.10	7
Excavator	D	17.80	196.17	428.00	35.67	26.75	8
Lt Duty passenger car	G	0.002065	0.013940	0.001640	0.000102	0.000463	9
Lt Duty passenger truck	G	0.002298	0.018217	0.002363	0.000137	0.000462	9
60% Car and 40% truck	G	0.002158	0.015650	0.001929	0.000116	0.000463	
HD Trucks	D	0.004856	0.022468	0.029434	0.001161	0.004272	9
Sand Shaker	D	46.10	130.20	604.30	39.70	2438.40	11

Notes: (1) Emission factor for Dump Truck Transport in grams/mile

(2) AP-42 Table II-7.1 (EPA 1985)

(3) EMFAC7G (ARB 1997) Year 2001 emission factors based on an avg speed of 55 mph

(4) AP-42 Table 3.4-1, Vol. 1 (EPA 1995)

(5) AP-42 Table 3.3-1, Vol. 1 (EPA 1995)

(6) Lloyd's Register of Shipping, London 1990, 1993, and 1995, from Acurex Env. Corp, 1996.

(7) Table 3.2.7-1 AP-42 Jan84 (gov't owned version)

(8) 1993 CEQA Handbook via Lida at FW

(9) Burden7F as faxed by Ogden (factor is for pounds/mile)

(10) EPA Nonroad Engine and Vehicle Emission Study - Report (Nov 91) from SAIC

(11) EPA Nonroad Engine and Vehicle Emission Study - Report (Nov 91) from SAIC

TABLE 2 - P-338s, Pier 3 Dredging, Truck Haul Assumptions

Ocean Disposal at LA-5 (Remainder Upland at El Corazon)

Work Day= 10 hrs
Trucktrip 80

Assumes 80 truck round trips/day

	CY Total	CY/load	loads	RT mi	hrs/RT	Days	Indiv RT/Day	Total RT/day	Total mi/day	Project total mi
NAVSTA to LA-5	85,500	2000	42.75		7	21.375	2	2		
NAVSTA to El Corazon	20,000	12	1,667	76	2.00	20.8	5.0	80	6,080	126,667
Lakeside to El Corazon	0	12	0	0	2.50	0.0	4.0	80	0	0
NOLF to El Corazon	7,000	12	583	104	2.75	7.3	3.6	80	8,320	60,667
	112,500		**2,250**			**28.1**			**14,400**	**187,333**
NAVSTA to NOLF	4,500	12	375	24	0.5	2.0	20.0	190	4,560	9,000
NAVSTA to Lakeside	72,000	12	6,000	42	1	50.0	10.0	120	5,040	252,000
	76,500		**6,375**			**52.0**			**9,600**	**261,000**

Appendix D

Traffic Studies

LINSCOTT LAW & GREENSPAN
ENGINEERS

ENGINEERS & PLANNERS ▪ TRAFFIC, TRANSPORTATION, PARKING

8989 Rio San Diego Drive, Suite 135 ▪ San Diego, California 92108
Phone: 619 299-3090 ▪ Fax: 619 299-7041

March 16, 1999

Mr. Alan Alcorn
MOFFATT, NICHOL & FERVER ENG.
1660 Hotel Circle North, Suite 200
San Diego, California 92108

SUBJECT: Traffic analysis for P338S Dredge Disposal of Sand from Naval Station San Diego to NOLF Imperial Beach

Dear Mr. Alcorn:

INTRODUCTION

This letter was prepared to respond to questions of potential traffic impacts on three routes for trucks from Naval Station San Diego to NOLF Imperial Beach in support of P338S Dredge Disposal. The trucks will haul sand over a six week period. It should be noted that the conclusions drawn from this analysis are general in nature and a more detailed analysis was not performed due to the very short time frame for the completion of this traffic study.

The following is addressed in this report:

- Project Description
- Existing Conditions
- Project Traffic Generation/Distribution/Assignment
- Existing Operations
- Existing + Project Operations
- Conclusions/Recommendations

PROJECT DESCRIPTION

The P338S Dredge Disposal of Sand from Naval Station San Diego to NOLF Imperial Beach Project consists of 25, 5 axle semi/dump trucks which make 220-250 round trips between 6:00 AM and 5:00 PM daily. This equates to 500 total truck trips. Each truck has 3 axles on the truck itself and 2 on the trailer. The trucks have a 22 ton net

Philip M. Linscott, P.E. (Ret.)
Jack M. Greenspan, P.E.
William A. Law, P.E. (Ret.)
Paul W. Wilkinson, P.E.
John P. Keating, P.E.
David S. Shender, P.E.

Costa Mesa - 714 641-1587 ▪ Pasadena - 818 796-2322 ▪ Las Vegas - 702 451-1920 ▪ An LG2WB Company

capacity. The hauling capacity is 22 cubic yards level, but they will be hauling only 9 to 14.5 cubic yards. Access to and from the facility is proposed via one of three routes through Imperial Beach. The following is a description of the three proposed routes:

Route 1) I-5 to Palm Avenue/Route 75 to 13th Street then south to NOLF.
Route 2) I-5 to Coronado Avenue to 13th Street then south to NOLF.
Route 3) I-5 to Coronado Avenue to Saturn Boulevard to Satellite Boulevard then west to NOLF.

EXISTING CONDITIONS

The following is a brief description of the streets in the project area. **Figure A** shows an existing conditions diagram and the existing traffic volumes. ADT's are based on most recent counts available from Caltrans and the City of Imperial Beach.

Palm Avenue/Route 75 is a six lane roadway in the project vicinity with an interchange at I-5. The existing ADT on Palm Avenue is approximately 52,400.

Coronado Avenue is classified as a Major Road both east and west of I-5 with an interchange at I-5. It currently provides two lanes in each direction with a two-way left turn lane located between Saturn Boulevard and 15th Street. Bike lanes are provided east of 15th Street. The speed limit is generally posted at 40 mph. The existing ADT on Coronado Avenue is approximately 27,600.

Satellite Boulevard is classified as a Collector Road in the project vicinity. It currently provides two lanes in each direction east of 15th Street and one lane in each direction west of 15th Street. The speed limit is posted at 35 mph and parking is generally permitted. The existing ADT on Satellite Boulevard is approximately 5,400.

Saturn Boulevard is classified as a Collector Road south of Coronado Avenue. It currently provides one lane in each direction south of the School/Park entrance and is two lanes northbound and one lane southbound north to Coronado Avenue. Curbside parking is generally permitted and no bike lanes are provided. The speed limit is posted at 30 mph south of the School/Park and 25 mph in the vicinity of the School/ Park. The existing ADT on Saturn Boulevard is approximately 10,700.

13th Street is classified as a Collector Road in the project vicinity. It currently provides two lanes in each direction and curbside parking is generally permitted. The posted speed limit is 35 mph north of Coronado Avenue and 30 mph south of Coronado Avenue. The existing ADT on 13th Street is approximately 12,600.

PROJECT TRAFFIC GENERATION/DISTRIBUTION/ASSIGNMENT

Site specific trip generation data was obtained from MOFFATT, NICHOL & FERVER ENGINEERS. Approximately 25, 5 axle semi/dump trucks will make 220-250 round trips between 6am and 5pm daily. This equates to a maximum of 500 total truck trips (250 inbound and 250 outbound).

PCE is defined as the number of passenger cars that are displaced by a single heavy vehicle of a particular type under the prevailing traffic conditions. Heavy vehicles have a greater traffic impact than passenger cars since: (1) They are larger than passenger cars, and therefore, occupy more roadway space; and (2) Their performance characteristics are generally inferior to passenger cars, leading to the formation of downstream gaps in the traffic stream (especially on upgrades) which cannot always be effectively filled by normal passing maneuvers. The project generates heavy vehicles (trucks). Therefore, a PCE factor was applied to the trips. For the purposes of this report, a PCE factor of 2.0 was applied to semi/dump trucks. Therefore, the total amount of traffic added to the street system is 1,000 Daily trips (500 daily truck trips multiplied by the PCE of 2).

The project traffic was distributed and assigned to the street system to one of three proposed routes:

- I-5 to Palm Avenue/Route 75 to 13th Street then south to NOLF
- I-5 to Coronado Avenue to 13th Street then south to NOLF
- I-5 to Coronado Avenue to Saturn Boulevard to Satellite Boulevard then west to NOLF

EXISTING OPERATIONS

Table A shows that all segments operate at Level of Service (LOS) C or better with the exception of Palm Avenue/Route 75 which currently operates at LOS E.

EXISTING + PROJECT OPERATIONS

Table A shows that no change in LOS is calculated on a daily basis at any study area segment based on the addition of project traffic.

CONCLUSIONS/RECOMMENDATIONS

The following is a summary of the traffic situation as it relates to the proposed project.

- No level of service change is calculated at any of the street segments in the study area due to the addition of project traffic.

- Due to the relatively short duration of the dredging project (six weeks), the addition of project traffic should not significantly impact the study segments on a daily basis. However, due to the characteristics of the individual routes, certain traffic related conclusions/recommendations can be made as follows.

1) Route 1 (Palm Avenue to 13th Street) should be avoided during peak hour operations (7:00 – 8:00 AM and 4:00 – 6:00 PM) since the existing LOS on Palm Avenue is LOS E. Any additional traffic to this segment would only compound the already poor Level of Service during peak hour operations.

2) Route 2 (Coronado Avenue to 13th Street) would be the best of the three possible routes due to the good Levels of Service on both Coronado Avenue and 13th Street and the spacing of signalized intersections.

3) Route 3 (Coronado Avenue to Saturn Boulevard to Satellite Boulevard) should also be avoided due to relatively short spacing of stop sign controlled intersections south of Coronado Avenue along Saturn Boulevard and the routes proximity to the School/Park.

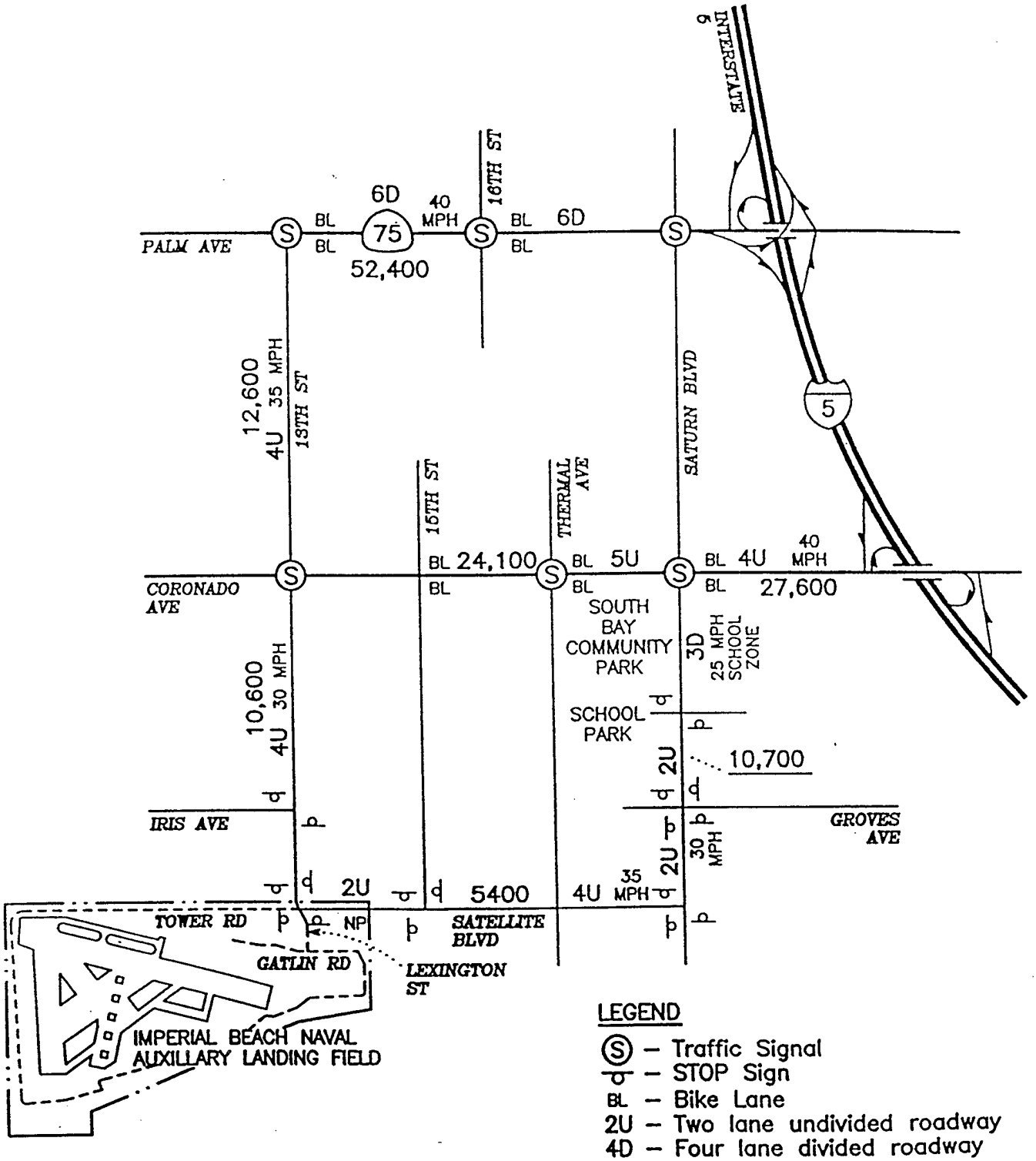
4) The proposed operating hours of the trucking/dredging is 6:00 AM to 5:00 PM. In an effort to avoid potential PM peak hour conflicts, it is recommended that the hours of trucking the material be changed to 6:00 AM to 4:00 PM.

If you should have any questions or comments, please feel free to call Brad Thornton or myself at (619) 299-3090.

Sincerely,
LINSCOTT, LAW & GREENSPAN

John Boarman, P.E.
Senior Transportation Engineer

JB/BLT/ja
875.letter rpt



NOTE: – ADT's are shown midblock

Figure A

EXISTING CONDITIONS DIAGRAM/TRAFFIC VOLUMES

IMPERIAL BEACH TRUCKING/DREDGING

LINSCOTT LAW & GREENSPAN

LINSCOTT LAW & GREENSPAN ENGINEERS

TABLE A

DAILY STREET SEGMENT OPERATIONS

STREET SEGMENT	CAPACITY *	EXISTING		EXISTING + PROJECT	
		VOLUME	LOS	VOLUME	LOS
Palm Avenue/SR 75					
13th Street to 16th Street	57,000	52,400	E	53,400	E
Coronado Avenue					
15th Street to Saturn Boulevard	37,000	24,100	C	25,100	C
Saturn Boulevard to I-5	37,000	27,600	C	28,600	C
Satellite Boulevard					
15th Street to Thermal Avenue	16,200	5,400	C	6,400	C
13th Street					
Palm Avenue to Coronado Avenue	34,200	12,600	A	13,600	A
Coronado Avenue to NOLF	34,200	10,600	A	11,600	A
Saturn Boulevard					
Coronado Avenue to Groves Avenue	34,200	10,700	A	11,700	A

* Based on County of San Diego Standards.

LINSCOTT LAW & GREENSPAN
ENGINEERS

ENGINEERS & PLANNERS • TRAFFIC, TRANSPORTATION, PARKING

8989 Rio San Diego Drive, Suite 135 • San Diego, California 92108
Phone: 619 299-3090 • Fax: 619 299-7041

April 29, 1999

Mr. Alan Alcorn
MOFFATT, NICHOL & FERVER ENG.
1660 Hotel Circle North, Suite 200
San Diego, California 92108

SUBJECT: Traffic Analysis for Project P338S to Dispose Dredge Material from Lakeside Land Company to Hanson Gravel

Dear Mr. Alcorn:

INTRODUCTION

This letter was prepared to determine and evaluate potential traffic impacts on the truck hauling route from the Lakeside Land Company to Hanson Gravel in Kearny Mesa in support of P338S Dredge Material Disposal. The trucks will haul material over a six week period. It should be noted that the conclusions drawn from this analysis are general in nature and a more detailed analysis was not performed due to the very short time frame available for the completion of this traffic study.

The following is addressed in this report:

- Project Description;
- Existing Conditions;
- Project Traffic Generation/Distribution/Assignment;
- Existing Operations;
- Existing + Project Operations; and
- Conclusions/Recommendations

PROJECT DESCRIPTION

The transport of material from the P338S project will use 5 axle semi/dump trucks to make 220 – 250 round trips between 6:00 AM and 5:00 PM daily. This equates to a maximum of 500 total truck trips (250 x 2). Each truck has 3 axles on the truck itself and 2 on the trailer. The trucks have a 22 ton net capacity. The hauling capacity is 22 cubic yards level, but trucks will typically haul only 9 to 14.5 cubic yards.

Access to and from the facility is proposed via two routes. Depending on the route taken, surface streets may include Riverside Drive, Riverford Road, Woodside Avenue, Mission Gorge Road, Kearny Villa Road, Miramar Way, and Harris Plant Road. The following is a description of two possible routes:

Route 1) Palm Row Drive to Riverside Drive to Riverford Road to SR 67 to I-8 to I-15 to SR 52 to Kearny Villa Road to Harris Plant Road.

Route 2) Palm Row Drive to Riverside Drive to Riverford Road to SR 67 to Woodside Avenue to Mission Gorge Road to SR 52 to Kearny Villa Road to Harris Plant Road.

EXISTING CONDITIONS

The following is a brief description of the streets on potential truck routes. **Figures A and B** shows the existing conditions diagram with existing traffic volumes for the areas near the Lakeside Land Company and Hanson Gravel. ADT's are based on most recent counts available from SANDAG, the City of Santee and the City of San Diego.

Riverside Drive is classified as a Collector along its entire length from Riverford Road to Lakeside Avenue and currently is a two lane undivided roadway. Riverside Drive is signalized at Palm Row Drive. The posted speed limit on Riverside Drive is 45 miles per hour, and bus stops and bike lanes are provided. This street is on both Routes 1 and 2.

Riverford Road is currently classified as a Prime Arterial from SR 67 to Riverside Drive. Riverford Road currently is a two lane undivided road from Woodside Avenue to just south of Riverside Drive. The northbound approach to Riverside Drive is a four lane undivided road. Riverford Road is currently signalized at Woodside Avenue and at Riverside Drive.. The posted speed limit is 40 miles per hour and curbside parking is generally prohibited. Bike lanes are provided in the project area. This street is on Routes 1 and 2.

Woodside Avenue is classified as a Major Street from Magnolia Avenue to SR 67. At SR 67, Woodside Avenue crosses under the freeway and acts as a service road for the

freeway along the east side. Woodside Avenue has four travel lanes between Magnolia Avenue and SR 67 off-ramp. The roadway has only two travel lanes paralleling SR 67. This street is on Route 2 only.

Mission Gorge Road is classified as a Prime Arterial from the western City boundary to West Hills Parkway and as a Major Street within the majority of the City. This roadway extends from Magnolia Avenue in Santee to Interstate 8 in San Diego. It generally provides four travel lanes. This street is on Route 2 only.

Harris Plant Road is a two lane undivided road with an existing ADT of about 2,000. Harris Plant Road meets Kearny Villa Road as a three leg interchange with Harris Plant Road being the overpass. This overpass is currently restricted to a single shared lane with eastbound traffic yielding. The single lane restriction may be due to a load restriction on the structure. The interchange currently operates at a Level of Service "A" with the overpass traffic consisting mostly of cement and semi/dump trucks. This street is on both Routes 1 and 2.

Kearny Villa Road is a four-lane divided road in the project vicinity. The posted speed limit is 55 mph. The existing ADT on Kearny Villa Road varies between 12,400 south of SR 163 and 28,200 north of SR 163. This street is on both Routes 1 and 2.

PROJECT TRAFFIC GENERATION/DISTRIBUTION/ASSIGNMENT

Site specific trip generation data was obtained from Moffatt, Nichol & Ferver Engineers. The 5 axle semi/dump trucks will make 220 – 250 round trips between 6:00 AM and 5:00 PM daily. This equates to a maximum of 500 total truck trips (250 inbound and 250 outbound).

Heavy vehicles, such as trucks, have a greater traffic impact than passenger cars since: (1) They are larger than passenger cars, and therefore, occupy more roadway space; and (2) Their performance characteristics are generally inferior to passenger cars, leading to the formation of downstream gaps in the traffic stream (especially on upgrades) which cannot always be effectively filled by normal passing maneuvers. These heavy vehicle traffic impacts are translated to an equivalent number of passenger cars for analytical purposes through a conversion known as Passenger Car Equivalent (PCE). A PCE is defined as the number of passenger cars that are displaced by a single heavy vehicle of a particular type under the prevailing traffic conditions. Since the project generates heavy vehicles (trucks), a PCE factor was applied to the trips. For the purposes of this report, a PCE factor of 2.0 was applied to semi/dump trucks. Therefore, the total amount of traffic added to the street system is 1,000 Daily trips (500 daily truck trips multiplied by the PCE of 2). This project traffic (1,000 ADT) was distributed and assigned to each of the two possible routes.

EXISTING OPERATIONS

Route 1 — Table A shows that two County of San Diego segments Riverford Drive and Riverside Road are currently operating at LOS E in existing conditions on a daily basis. It should be noted that the LOS E conditions on Riverford Drive and Riverside Road are misleading. The intersections along both these segments currently operate at LOS C or better during AM and PM peak hours, which is a better indicator of the overall operations in this area. Segments on Harris Plant Road and Kearny Villa Road all operate at a good LOS C or better on a daily basis.

Route 2 — Table A shows that two County of San Diego segments Riverford Drive and Riverside Road are currently operating at LOS E in existing conditions on a daily basis. Again, this poor LOS is misleading LOS F conditions exist on two of the three segments analyzed on Mission Gorge Road in the City of Santee. Segments on Harris Plant Road and Kearny Villa Road all operate at a good LOS C or better on a daily basis.

Table B shows that Kearny Villa Road/Harris Plant Road interchange currently operates at LOS A. The unsignalized intersection LOS calculations are included in Attachment A.

EXISTING + PROJECT OPERATIONS

Table A shows that no change in LOS is calculated on a daily basis at any study area segment based on the addition of project traffic.

Route 1 — Table A shows no change in LOS occurs with the addition of project traffic on any Route 1 segment. No significant impact is expected on these two segments due to the good peak hour operations and the relatively short duration of the transportation of material (six weeks). All other segments continue to operate at LOS C or better on a daily basis.

Route 2 — Table A shows no change in LOS occurs with the addition of project traffic on any Route 2 segment. However, the project will add traffic to the LOS F conditions, which exist on two of the three segments analyzed on Mission Gorge Road in the City of Santee. Segments on Harris Plant Road and Kearny Villa Road all continue to operate at LOS C or better on a daily basis.

Table B shows that no change in LOS is calculated on a peak hour basis at the Kearny Villa Road/Harris Plant Road interchange.

CONCLUSIONS/RECOMMENDATIONS

The following is a summary of the traffic situation as it relates to the proposed project.

1) Route 1 – Due to the relatively short duration of the transportation of material (six weeks), the addition of project traffic should not significantly impact the study area segments on this route. Additionally, this route consists of a much smaller portion of surface street travel than that of Route 2. This is the recommended route.

2) Route 2 – This route should be avoided due to the LOS F conditions, which exist on Mission Gorge Road in the City of Santee. Any additional traffic on Mission Gorge Road would only aggravate the already poor conditions that exist on this roadway. This route is not recommended.

3) The proposed operating hours of the trucking/dredging is 6:00 AM to 5:00 PM. In an effort to avoid potential PM peak hour conflicts, it is recommended that the hours of trucking the material be changed to 6:00 AM to 4:00 PM.

If you should have any questions or comments, please feel free to call Brad Thornton or myself at (619) 299-3090.

Sincerely,
LINSCOTT, LAW & GREENSPAN

John Boarman, P.E.
Senior Transportation Engineer

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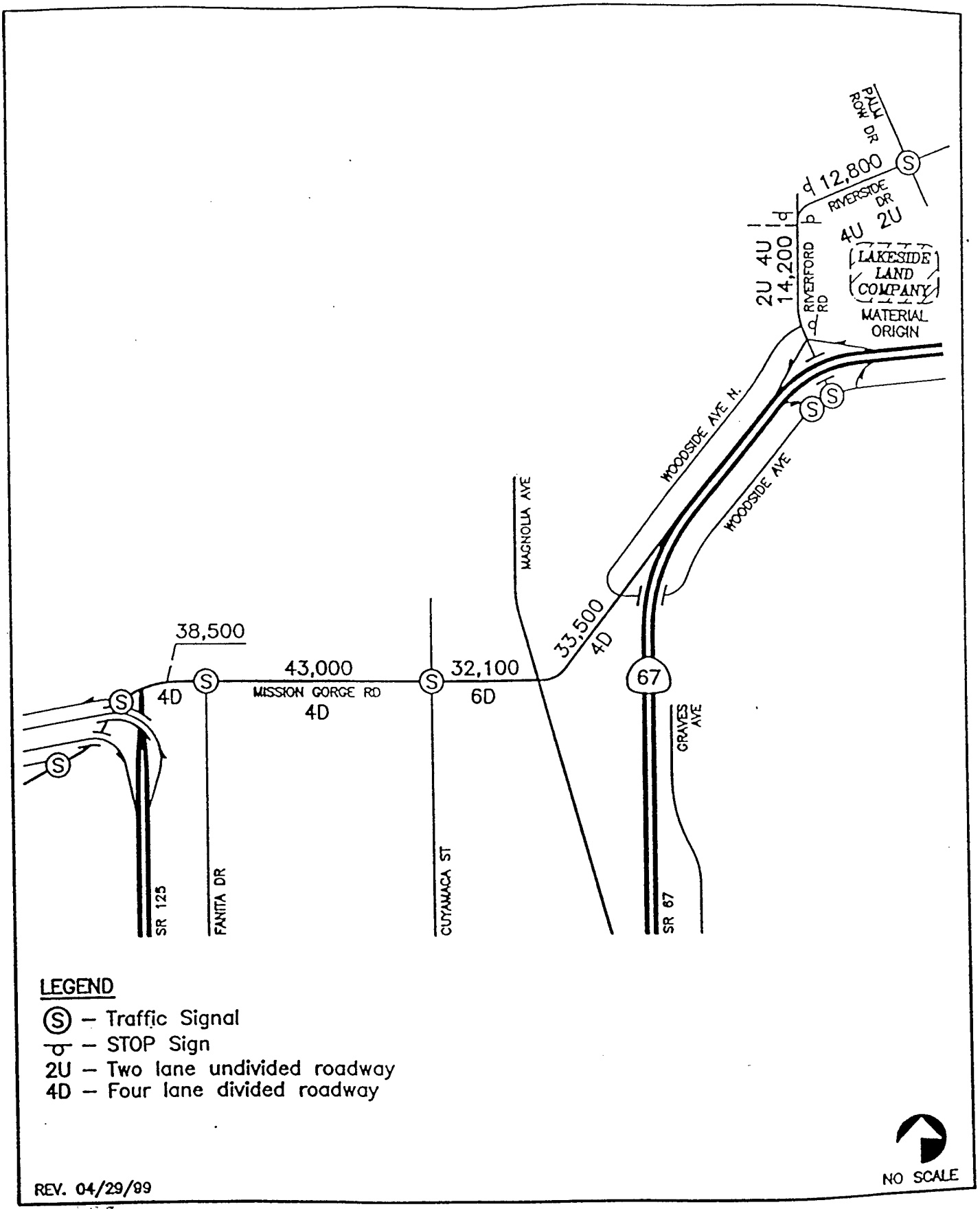

Figure A

EXISTING CONDITIONS DIAGRAM/TRAFFIC VOLUMES

HANSON GRAVEL TRUCKING/DREDGING

LINSCOTT LAW & GREENSPAN

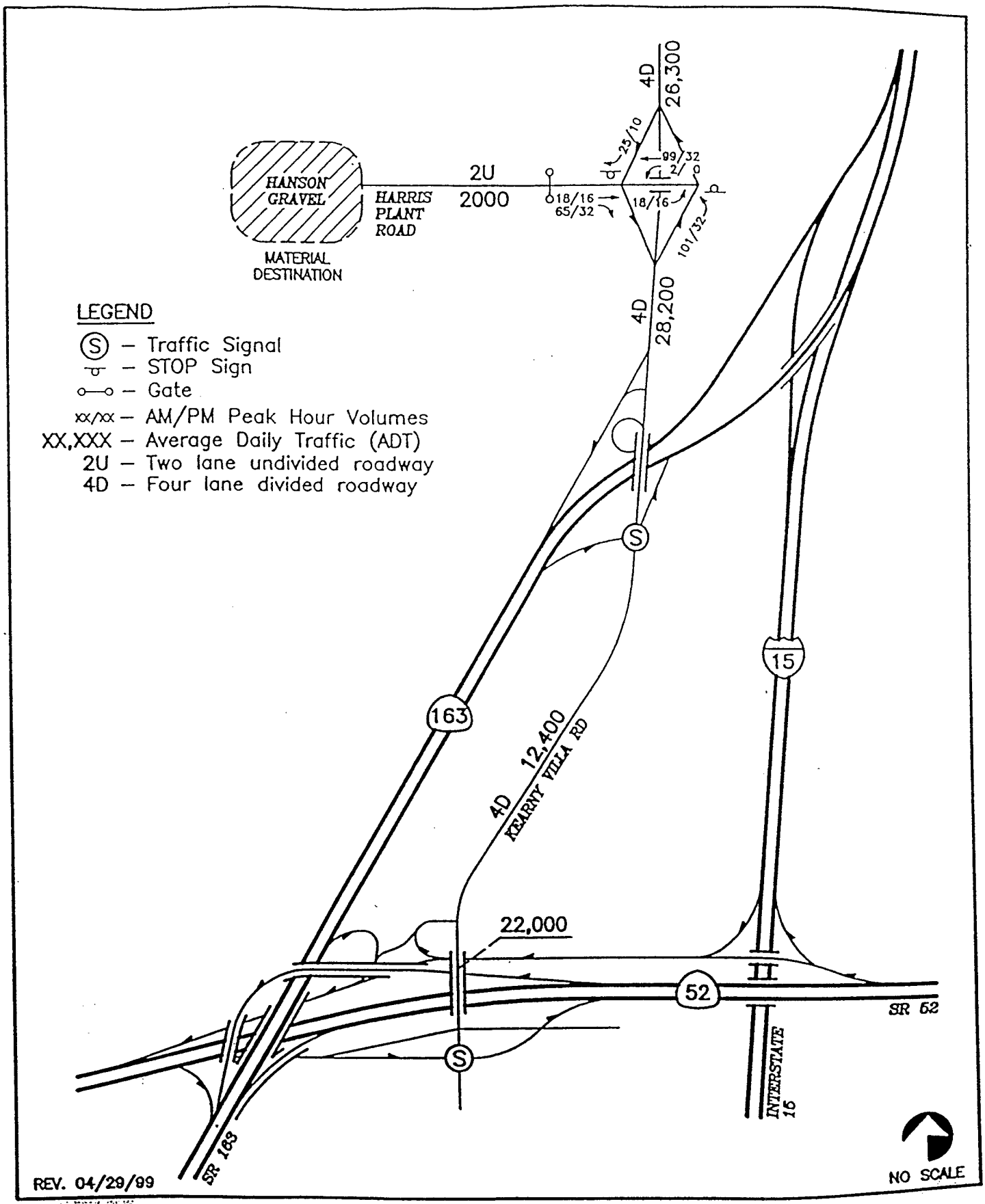

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Figure B

EXISTING CONDITIONS DIAGRAM/TRAFFIC VOLUMES

HANSON GRAVEL TRUCKING/DREDGING

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TABLE A

DAILY STREET SEGMENT OPERATIONS

STREET SEGMENT	CAPACITY (LOS E)	EXISTING		EXISTING + PROJECT		ROUTE AFFECTED
		VOLUME	LOS	VOLUME	LOS	
Riverside Drive	16,200 [1]	12,800	E	13,800	E	1 & 2
Riverford Road	16,200 [1]	14,200	E	15,200	E	1 & 2
Woodside Avenue	29,600 [2]	33,500	E	34,500	E	2
Mission Gorge Road						
Magnolia Avenue & Cuyamaca Street	29,600 [2]	32,100	D	33,100	D	2
Cuyamaca Street & Fanita Drive	29,600 [2]	43,000	F	44,000	F	2
Fanita Drive & SR 52	29,600 [2]	38,500	F	39,500	F	2
Harris Plant Road	10,000 [3]	2,000	A	3,000	A	1 & 2
Kearny Villa Road						
SR 52 EB on-ramp to SR 52 WB off-ramp	40,000 [3]	22,000	C	23,000	C	1 & 2
SR 52 to SR 163	40,000 [3]	12,400	A	12,400	A	1 & 2
Harris Plant Road to SR 163	40,000 [3]	28,200	C	29,200	C	1 & 2
Miramar Way to Harris Plant Road	40,000 [3]	26,300	C	26,800	C	1 & 2

[1] Based on City of San Diego Standards.
[2] Based on City of Santee Standards, capacity shown at LOS C.
[3] Based on City of San Diego Standards.

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TABLE B

UNSIGNALIZED INTERSECTION OPERATIONS

INTERSECTION	PEAK PERIOD	MOVEMENT	EXISTING		EXISTING + PROJECT	
			DELAY	LOS	DELAY	LOS
Harris Plant Road/SB on-ramp to Kearny Villa Road	AM	SB R	3.0	A	3.3	A
		WB L	2.3	A	2.5	A
	PM	SB R	2.7	A	3.0	A
Harris Plant Road/NB off-ramp from Kearny Villa Road	AM	NB L	4.0	A	4.3	A
		EB L	2.1	A	2.1	A
	PM	NB L	3.6	A	3.9	A
		EB L	2.1	A	2.1	A

DELAY is measured in seconds.
LOS = Level of Service
L = Left-turn, etc.
SB = Southbound, etc.

DELAY	LOS
0.0 ≤ 5.0	A
5.1 to 10.0	B
10.1 to 20.0	C
20.1 to 30.0	D
30.1 to 45.0	E
> 45.0	F

Appendix E

Glossary

The original EA dated June 1997 contained a list of acronyms. This glossary expands the list of acronyms and includes definitions of technical words.

Aquifer – A body of rock that is sufficiently permeable to conduct groundwater and to yield economically significant quantities of water to wells and springs.

Aggregate – Any of several hard inert materials (as sand, gravel, or slag) used for mixing with a cementing material to form concrete, mortar, or plaster.

Ambient – Background or existing environment.

BTXE – Benzene, Toluene, Xylene, Ethylbenzene – volatile liquid hydrocarbons.

CNEL – Community Noise Equivalent Level.

CSS -- Coastal Sage Scrub – Drought resistant shrub community, which is important habitat to the Federally threatened California gnatcatcher.

Conglomerate – Rock composed of rounded fragments varying from small pebbles to large boulders in a cement (as of hardened clay).

"Contained-in" Rule – With mixtures of media (such as munitions in sediment), the media can be returned to the environment once properly treated.

De minimis – "The law is not concerned with trifling matters." The Clean Air Act General Conformity Rule includes *de minimis* levels for non-attainment pollutants (tons/year).

Effluent – Something that flows out as a waste material discharged into the environment especially when serving as a pollutant.

Evaporation – Conversion into vapor.

Groundwater – The supply of fresh water found beneath the Earth's surface, usually in aquifers which is often used in supplying wells and springs.

Hydrologic Area – Major tributaries and/or major groundwater basins within an entire watershed of one or more streams.

Inert Waste – As defined in 27 CCR 20230, inert waste is that subset of solid waste that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives, and does not contain significant quantities of decomposable waste.

Leachate – A solution or product obtained by leaching (to dissolve out by the action of a percolating liquid).

Magnetometer – An instrument used to detect the presence of a metallic object or to measure the intensity of a magnetic field.

MBTA – Migratory Bird Treaty Act.

Mixture Rule – A mixture of a solid waste and a hazardous waste is defined as a hazardous waste unless the resultant mixture no longer exhibits any characteristic of hazardous waste.

MSL – Mean Sea Level.

Ordnance – Military supplies including weapons, ammunition, combat vehicles, and maintenance tools and equipment.

Perched groundwater – Unconfined groundwater separated from the main body of groundwater by unsaturated rock.

Percolation – The movement of water downward and radially through sub-surface soil layers, usually continuing downward to the ground water

$PM_{2.5}$ – Suspended particulate matter below 2.5 microns in size.

Reclamation – Restore excavated areas to their original elevation.

Riparian – Areas adjacent to rivers or streams that have a high density, diversity and productivity of plant and animal species relative to nearby uplands.

Salinity – Consisting of, or containing salt.

Tributary – A stream feeding a larger stream or a lake.

TDS – Total Dissolved Solids.

Vernal Pools – Depressions on mesa tops with clay hardpan soil which hold rainwater for extended periods during the wet season and are dry during summer.

Volatilization – To cause to pass off in vapor.

Wetlands – An area that is regularly saturated by surface of ground water and is subsequently characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions.